

# Project -> Full Stack Java Developer Capstone Project

## **1. ICIN Bank**

This Project is Developed by Anushka Sharma. This project is hosted on the git repository : <https://github.com/AnushkaSharma9/Capstone-Project-ICIN-Online-Banking.git>

### **1.1 PROJECT DESCRIPTION**

This application is designed and developed as an Online Banking Web Application where the back-end is developed using Sprint Boot Framework and front-end is developed by using Angular. This system allows ICIN Bank admin to provide net banking facilities for end users, such as Registration, Login, Account transactions, Transfers, Saving details, Requesting cheque books, etc. The admin user is able retrieve transactions as well as block user. The user can register or login into the application , they can deposit or withdraw money from their account, view transactions, and balance in the primary and savings account. Transfer funds between different and add recipients, request cheque books for different accounts.

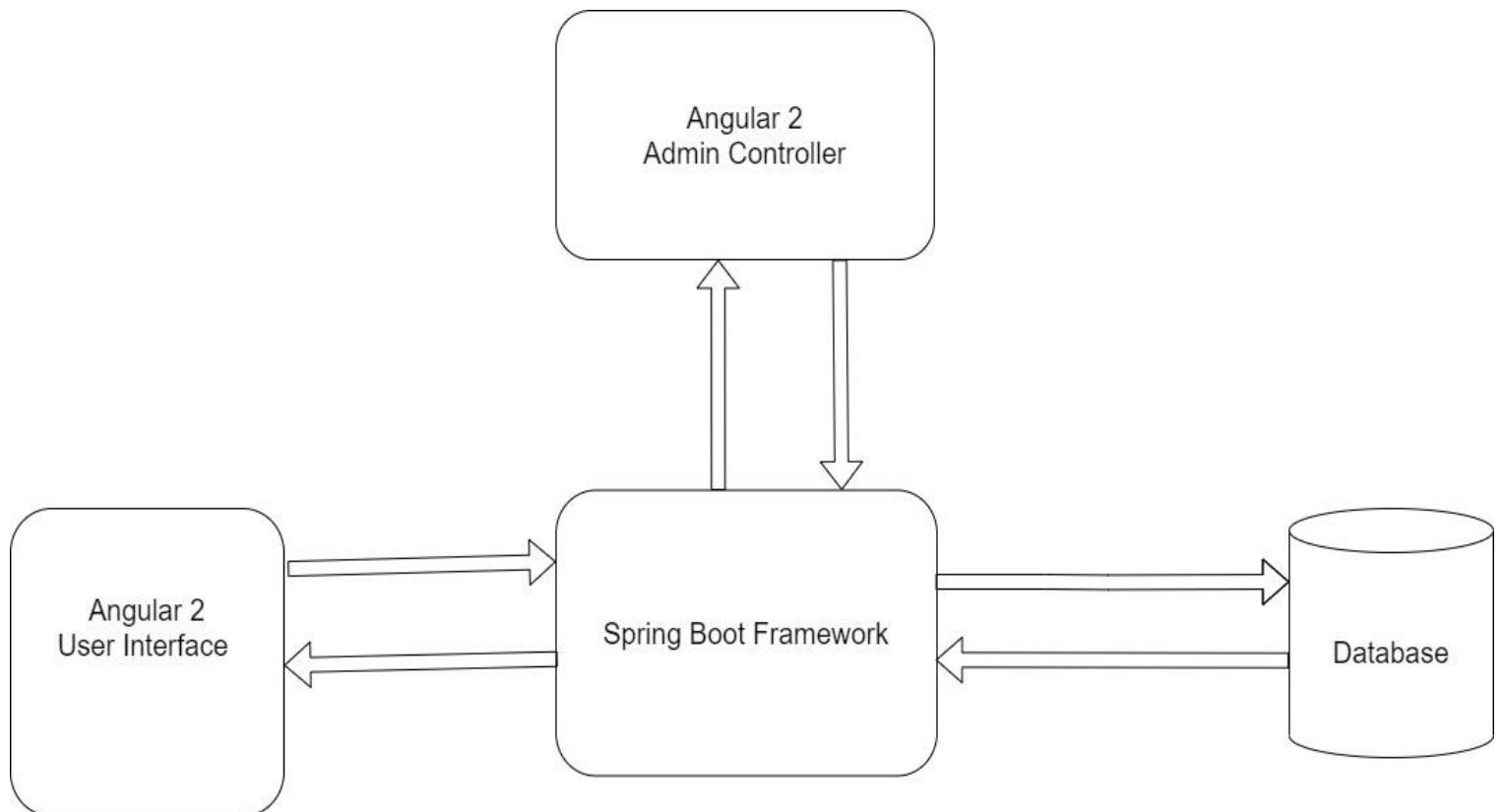
### **1.1.2 TECH STACK**

- MySQL
- Eclipse
- Spring boot Framework
- Core Java Concepts - Object Oriented Programming (OOPS) Concepts such as Classes and Objects.
- JDBC template
- HTML - Hyper Text Markup Language
- CSS - Cascading Style Sheets

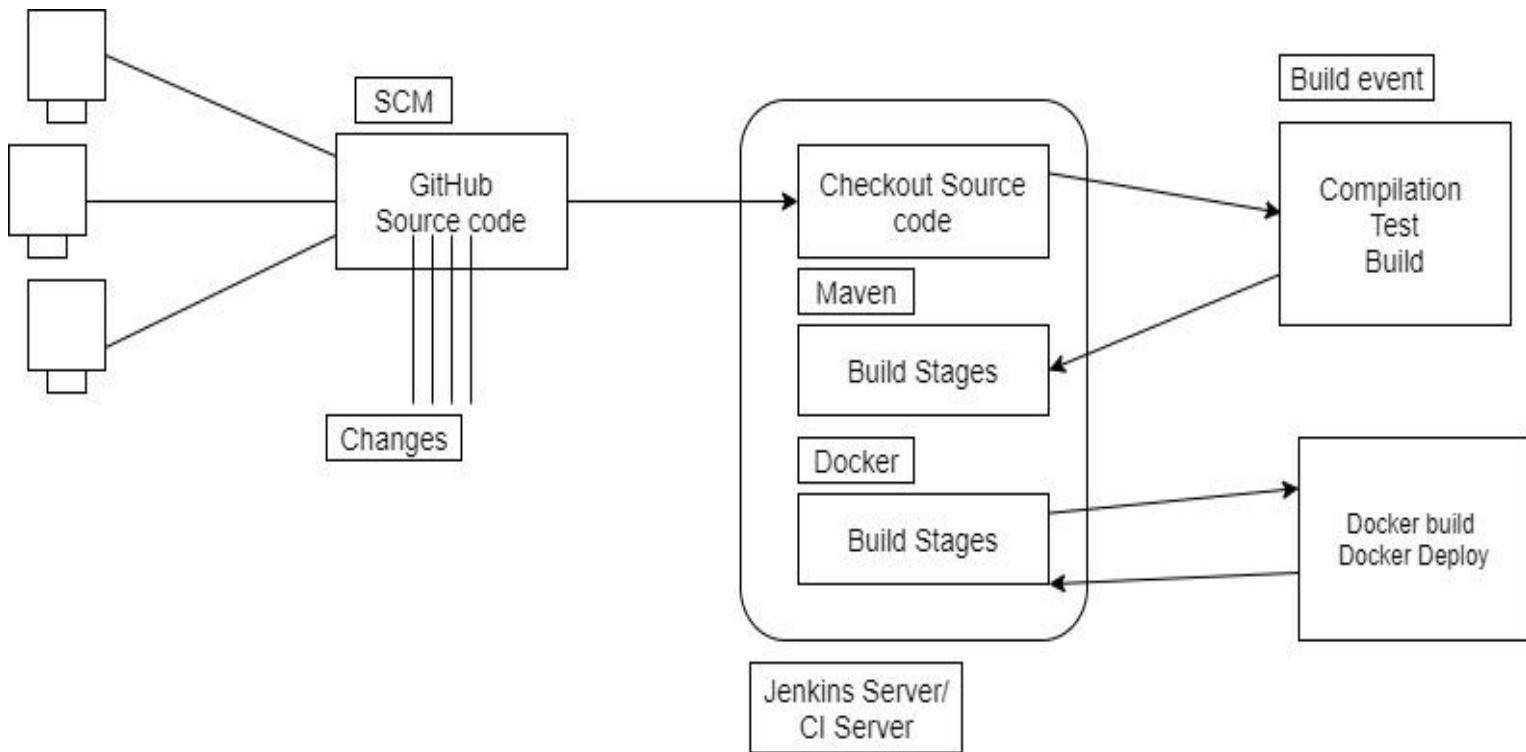
- Angular 2
- Jenkins
- Docker
- AWS EC2 instance
- Junit

## **2. FLOW CHART OF THE APPLICATION**

The below given picture depicts the flow of the Project :



**FIG 1 - FLOW CHART OF THE PROJECT**



**FIG 1 - FLOW CHART OF THE DEPLOYMENT**

### **3. PROJECT USER STORIES : (Agile and Scrum)**

- As a user I want an ICIN bank Online Banking web Application for end users.
- As a user I want an ICIN bank Online Banking web Application in which I can retrieve transaction for end users.
- As a user I want an ICIN bank Online Banking web Application in which I can block an end user.
- As a user I want an ICIN bank Online Banking web Application in which end user can register into the application.

- As a user I want an ICIN bank Online Banking web Application in which end user can login into the application.
- As a user I want an ICIN bank Online Banking web Application in which end user can deposit and withdraw from the account in the application.
- As a user I want an ICIN bank Online Banking web Application in which end user can view transaction and balance in the primary and savings account in the application.
- As a user I want an ICIN bank Online Banking web Application in which end user can transfer funds between different accounts and add recipients in the application.
- As a user I want an ICIN bank Online Banking web Application in which end user can request cheque books for different accounts in the application.
- As a developer I want to develop an ICIN bank Online Banking web Application for end users as well as Admin user.
- As a developer I want to develop an ICIN bank Online Banking web Application in which Admin user can retrieve transaction for end users.
- As a developer I want to develop an ICIN bank Online Banking web Application in which Admin user can block an end users.
- As a developer I want to develop an ICIN bank Online Banking web Application in which end user can register into the application.
- As a developer I want to develop an ICIN bank Online Banking web Application in which end user can login into the application.
- As a developer I want to develop an ICIN bank Online Banking web Application in which end user can deposit and withdraw from the account in the application.
- As a developer I want to develop an ICIN bank Online Banking web Application in which end user can view transaction and balance in the primary and savings account in the application.

- As a developer I want to develop an ICIN bank Online Banking web Application in which end user can transfer funds between different accounts and add recipients in the application.
- As a developer I want to develop an ICIN bank Online Banking web Application in which end user can request cheque books for different accounts in the application.

## **4. SPRINTS**

### **Sprint 1**

- Understanding the problem statement of the project .
- Creating the flow chart of the application.
- Creating Spring Boot Project.
- Adding necessary dependencies.
- Creating Controller, Model, DAO, Exception, Service, and ServiceImpl packages needed.
- Writing Hibernate to connect with the database MySQL.
- Testing at each step for different user inputs.

### **Sprint 2**

- Downloading Angular2 for making the front end of the application.
- Adding various folders to achieve the front-end for making the application user-friendly
- In these folders adding .html, .css, .ts , as well as .spec.ts.
- Connecting to the backend.
- Running the application on a port.

### **Sprint 3**

- Adding Testing using Junit.
- Adding necessary dependencies.
- Creating TestWebApp to code the Required Tests.
- Running to see if all test cases run on Junit.

## Sprint 4

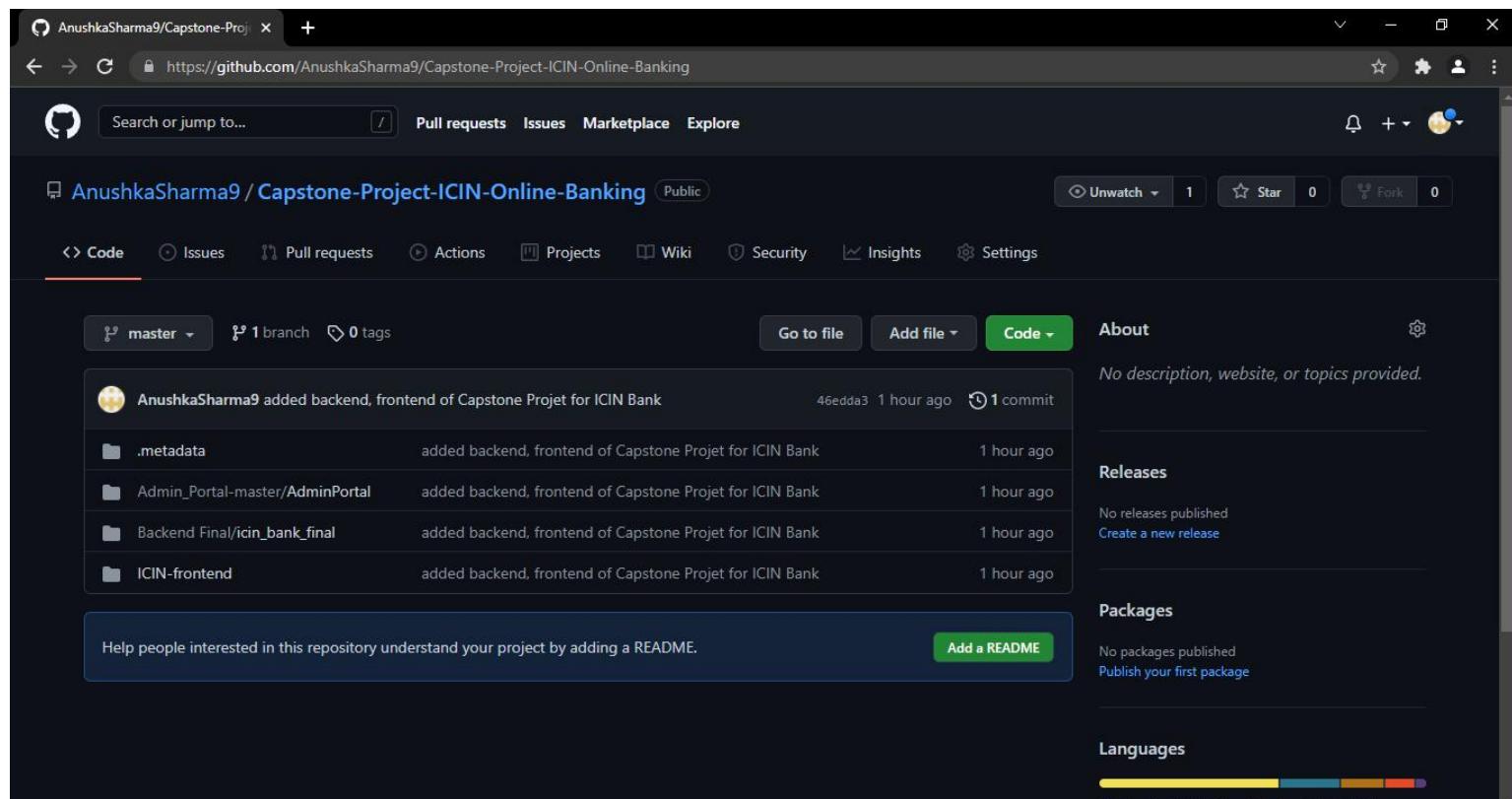
- Creating AWS EC2 instance.
- Downloading MobaXterm.
- Downloading Jenkins and Docker in MobaXterm.
- Deploying the application on Jenkins and docker server.
- Creating the Specification document for deploying the project.
- Testing at each step for different user inputs.
- Pushing the code to the GitHub

## 5. PROJECT GIT REPOSITORIES

1. Link to the GitHub Repository : <https://github.com/AnushkaSharma9/Capstone-Project-ICIN-Online-Banking.git>

2. clone git : <https://github.com/AnushkaSharma9/Capstone-Project-ICIN-Online-Banking.git>

3. Screen Shot of GitHub :



## 4. How to run Project :

### 4.1. clone project

clone git : git clone <https://github.com/AnushkaSharma9/Capstone-Project-ICIN-Online-Banking.git>

4.2. open Capstone-Project-ICIN-Online-Banking->Backend Final->icin\_bank\_final->src->main->java->com->icin

right click on icin\_bank\_final -> Run as -> Spring Boot App

❖ Name of Project->>**icin\_bank\_final**

### 4.3 ICIN-frontend -

- Open VS Code in this folder
- Run command in VS Code in terminal as ‘ng serve’, to start the ICIN interface for user on port <http://localhost/4200>.

### 4.4 Admin\_Portal-master/AdminPortal -

- Open VS Code in this folder
- Run command in VS Code in terminal as ‘ng serve --port 4201’, to start the Admin Controller for user on port <http://localhost/4201>.

❖ **CI/CD PIPELINE USING JENKINS -**

### 4.5 Create EC2 Instance on AWS as follows:

Instances | EC2 Management Con X + https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#Instances:

Services ▾ Search for services, features, blogs, docs, and more [Alt+S] Connect Instance state Actions Launch instances

New EC2 Experience Tell us what you think

EC2 Dashboard EC2 Global View Events Tags Limits

Instances Instances New Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances New Dedicated Hosts Scheduled Instances Capacity Reservations

Images

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The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (selected), Images, and a feedback link. The main content area has tabs for Instances and Info, with a search bar and filters for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone. A message says "You do not have any instances in this region". Below this is a modal titled "Select an instance" which lists various instance types and AMIs.

Launch instance wizard | EC2 Management Con X + https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

Services ▾ Search for services, features, blogs, docs, and more [Alt+S] Connect anushka921 N. Virginia Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

Launch a database using RDS

SUSE Linux Enterprise Server 15 SP2 (HVM), SSD Volume Type - ami-0fde50fcbed46f2f7 (64-bit x86) / ami-05f2f5f76d89313bb (64-bit Arm)  
Free tier eligible Select  
64-bit (x86) 64-bit (Arm)

Ubuntu Server 20.04 LTS (HVM), SSD Volume Type - ami-083654bd07b5da81d (64-bit x86) / ami-04fe9398b2a27a600 (64-bit Arm)  
Free tier eligible Select  
64-bit (x86) 64-bit (Arm)

Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-0279c3b3186e54acd (64-bit x86) / ami-0528007a60177dd84 (64-bit Arm)  
Free tier eligible Select  
64-bit (x86) 64-bit (Arm)

This screenshot shows the "Launch instance wizard" step 1: Choose an Amazon Machine Image (AMI). It lists three options: SUSE Linux Enterprise Server 15 SP2 (HVM), SSD Volume Type; Ubuntu Server 20.04 LTS (HVM), SSD Volume Type; and Ubuntu Server 18.04 LTS (HVM), SSD Volume Type. Each option includes a "Free tier eligible" badge, a "Select" button, and radio buttons for 64-bit (x86) and 64-bit (Arm) architectures. The SUSE Linux option is currently selected.

Launch instance wizard | EC2 Manager New Tab https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

Services ▾ Search for services, features, blogs, docs, and more [Alt+S]

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

### Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance families ▾ Current generation ▾ Show/Hide Columns

Currently selected: t2.medium (~ ECUs, 2 vCPUs, 2.3 GHz, ~ 4 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

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Launch instance wizard | EC2 Manager New Tab https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

### Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances: 1 Launch into Auto Scaling Group

Purchasing option: Request Spot instances

Network: vpc-0b339b7f7b4b6d3d0 (default) Create new VPC

Subnet: No preference (default subnet in any Availability Zone) Create new subnet

Auto-assign Public IP: Use subnet setting (Enable)

Placement group: Add instance to placement group

Capacity Reservation: Open

Domain join directory: No directory Create new directory

IAM role: None Create new IAM role

Cancel Previous Review and Launch Next: Add Storage

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

### Step 3: Configure Instance Details

Shutdown behavior: Stop

Stop - Hibernate behavior:  Enable hibernation as an additional stop behavior

Enable termination protection:  Protect against accidental termination

Monitoring:  Enable CloudWatch detailed monitoring  
Additional charges apply.

Tenancy: Shared - Run a shared hardware instance  
Additional charges will apply for dedicated tenancy.

Elastic Inference:  Add an Elastic Inference accelerator  
Additional charges apply.

Credit specification:  Unlimited  
Additional charges may apply

File systems: Add file system Create new file system

Advanced Details

Cancel Previous Review and Launch Next: Add Storage

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Launch instance wizard | EC2 Ma New Tab

https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

### Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/sda1	snap-0c97f1c43c6bb2043	16	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Shared file systems

Cancel Previous Review and Launch Next: Add Tags

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Launch instance wizard | EC2 Manager New Tab https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

## Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.

A copy of a tag can be applied to volumes, instances or both.

Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key	(128 characters maximum)	Value	(256 characters maximum)	Instances	Volumes	Network Interfaces
Name		webserver		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Add another tag (Up to 50 tags maximum)

Cancel Previous Review and Launch Next: Configure Security Group

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

## Step 6: Configure Security Group

allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group:  Create a new security group  Select an existing security group

Security group name: webserver

Description: webserver created 2021-11-19T20:37:22.256+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	My IP	49.36.220.14/32
Custom TCP F	TCP	80	Anywhere	0.0.0.0/0
Custom TCP F	TCP	8080	Anywhere	0.0.0.0/0
Custom TCP F	TCP	8090	Anywhere	0.0.0.0/0
Custom TCP F	TCP	4200	Anywhere	0.0.0.0/0
Custom TCP F	TCP	4201	Anywhere	0.0.0.0/0

Cancel Previous Review and Launch

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Launch instance wizard | EC2 Manager

<https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard>

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

### Step 7: Review Instance Launch

Protocol	Port	Source IP	Port Range	Description
SSH	TCP	22	49.36.220.14/32	Anushka IP
HTTP	TCP	80	0.0.0.0/0	Open for all
HTTP	TCP	80	::/0	Open for all
Custom TCP Rule	TCP	8080	0.0.0.0/0	Open for all
Custom TCP Rule	TCP	8080	::/0	Open for all
Custom TCP Rule	TCP	8090	0.0.0.0/0	Open for all
Custom TCP Rule	TCP	8090	::/0	Open for all
Custom TCP Rule	TCP	4200	0.0.0.0/0	Open for all
Custom TCP Rule	TCP	4200	::/0	Open for all
Custom TCP Rule	TCP	4201	0.0.0.0/0	Open for all
Custom TCP Rule	TCP	4201	::/0	Open for all

▶ Instance Details [Edit instance details](#)

▶ Storage [Edit storage](#)

[Cancel](#) [Previous](#) [Launch](#)

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<https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard>

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### Step 7: Review Instance Launch

Protocol	Port	Source IP	Port Range	Description
SSH	TCP	22	49.36.220.14/32	Anushka IP
HTTP	TCP	80	0.0.0.0/0	Open for all
HTTP	TCP	80	::/0	Open for all
Custom TCP Rule	TCP	8080	0.0.0.0/0	Open for all
Custom TCP Rule	TCP	8080	::/0	Open for all
Custom TCP Rule	TCP	8090	0.0.0.0/0	Open for all
Custom TCP Rule	TCP	8090	::/0	Open for all
Custom TCP Rule	TCP	4200	0.0.0.0/0	Open for all
Custom TCP Rule	TCP	4200	::/0	Open for all
Custom TCP Rule	TCP	4201	0.0.0.0/0	Open for all
Custom TCP Rule	TCP	4201	::/0	Open for all

▶ Instance Details [Edit instance details](#)

▶ Storage [Edit storage](#)

▶ Tags [Edit tags](#)

**Select an existing key pair or create a new key pair**

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance. Amazon EC2 supports ED25519 and RSA key pair types.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair [Download Key Pair](#)

**Key pair type**  RSA  ED25519

**Key pair name** webserver-icin

You have to download the **private key file** (\*.pem file) before you can continue. **Store it in a secure and accessible location**. You will not be able to download the file again after it's created.

[Cancel](#) [Launch Instances](#)

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Launch instance wizard | EC2 Management Console

https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

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## Launch Status

Your instances are now launching  
The following instance launches have been initiated: i-0a9ccb373c2a34922 View launch log

Get notified of estimated charges  
Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

### How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. Find out how to connect to your instances.

#### Here are some helpful resources to get you started

- How to connect to your Linux instance
- Learn about AWS Free Usage Tier
- Amazon EC2: User Guide
- Amazon EC2: Discussion Forum

While your instances are launching you can also

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Instances | EC2 Management Console

https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#Instances:

New EC2 Experience Tell us what you think

EC2 Dashboard EC2 Global View Events Tags Limits

Instances Instances New Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Scheduled Instances Capacity Reservations

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## Instances (1/1)

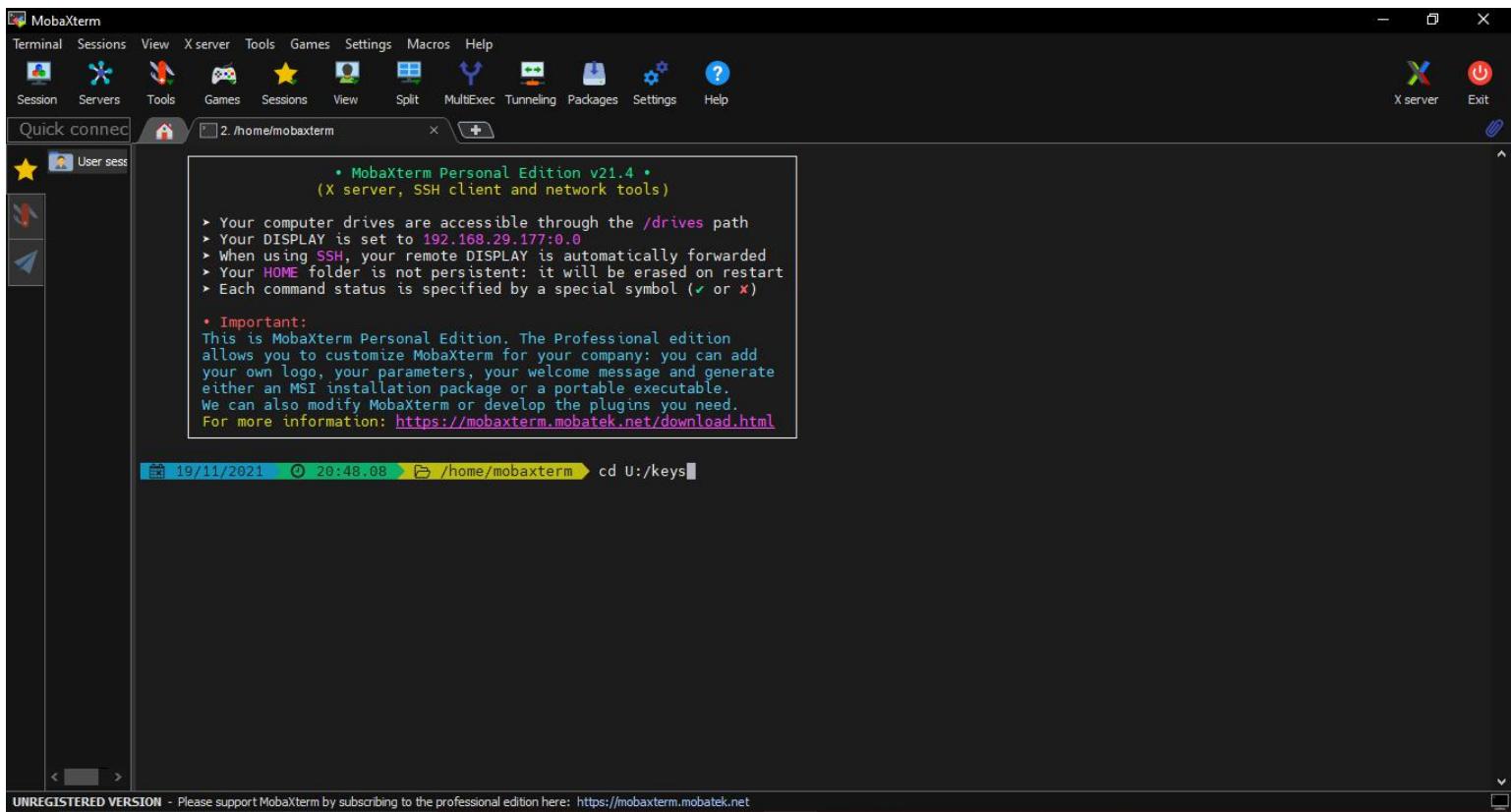
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
webserver	i-0a9ccb373c2a34922	Running	t2.medium	-	No alarms	us-east-1d

### Instance: i-0a9ccb373c2a34922 (webserver)

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0a9ccb373c2a34922 (webserver)	54.196.255.201   open address	172.31.24.207

IPv6 address	Instance state	Public IPv4 DNS
-	Running	ec2-54-196-255-201.compute-1.amazonaws.com   open address

4.6 Put key In MobaXterm :-> ssh -i "webserver-icin.pem" ubuntu@ec2-54-196-255-201.compute-1.amazonaws.com



Connect to instance | EC2 Manager

https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#ConnectToInstance:instanceId=i-0a9ccb373c2a34922

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EC2 Instances i-0a9ccb373c2a34922 Connect to instance

**Connect to instance** Info

Connect to your instance i-0a9ccb373c2a34922 (webserver) using any of these options

EC2 Instance Connect Session Manager **SSH client** EC2 Serial Console

Instance ID  
i-0a9ccb373c2a34922 (webserver)

1. Open an SSH client.  
2. Locate your private key file. The key used to launch this instance is `webserver-icin.pem`  
3. Run this command, if necessary, to ensure your key is not publicly viewable.  
chmod 400 `webserver-icin.pem`

4. Connect to your instance using its Public DNS:  
ec2-54-196-255-201.compute-1.amazonaws.com

Example:  
ssh -i "webserver-icin.pem" ubuntu@ec2-54-196-255-201.compute-1.amazonaws.com

**Note:** In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

```

ubuntu@ip-172-31-24-207: ~
Terminal Sessions View Xserver Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect 2. ubuntu@ip-172-31-24-207: ~
19/11/2021 20:48:08 /home/mobaxterm cd U:/keys
10/11/2021 20:48:44 /drives/u/keys ssh -i "webserver-icin.pem" ubuntu@ec2-54-196-255-201.compute-1.amazonaws.com
Warning: Permanently added 'ec2-54-196-255-201.compute-1.amazonaws.com' (RSA) to the list of known hosts.
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.11.0-1020-aws x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/advantage

System information as of Fri Nov 19 15:19:36 UTC 2021

System load: 0.02 Processes: 113
Usage of /: 8.8% of 15.45GB Users logged in: 0
Memory usage: 5% IPv4 address for eth0: 172.31.24.207
Swap usage: 0%

1 update can be applied immediately.
To see these additional updates run: apt list --upgradable

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

/usr/bin/xauth: file /home/ubuntu/.Xauthority does not exist
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-24-207:~$ 

```

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

## 4.7 Install Jenkins server on MobaXterm : -

```

ubuntu@ip-172-31-24-207: ~
Terminal Sessions View Xserver Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect 2. ubuntu@ip-172-31-24-207: ~
Found Ubuntu 20.04.3 LTS (20.04) on /dev/xvda1
done
ubuntu@ip-172-31-24-207:~$ sudo apt install default-jdk -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  at-spi2-core ca-certificates-java default-jdk-headless default-jre default-jre-headless fontconfig-config fonts-dejavu-core fonts-dejavu-extra
  java-common libatkbridge2.0-0 libatk-wrapper-java libatk-wrapper-java-jni libatk1.0-0 libatspi2.0-0 libavahi-client3
  libavahi-common-data libavahi-common3 libcups2 libdrm-amdgpu1 libdrm-intel1 libdrm-nouveau2 libdrm-radeon1 libfontconfig1 libfontenc1 libgif7 libgl1
  libgl1-mesa-dri libglapi-mesa libglvnd0 libglx-mesa0 libglx0 libgraphite2-3 libharfbuzz0b libice-dev libice6 libjpeg-turbo8 libjpeg8 liblcms2-2
  libllvm12 libpcaccess0 libpccs1 libpthread-stubs0-dev libsensors-config libsensors5 libsm-dev libsm6 libvulkan1 libwayland-client0 libx11-dev
  libx11-xcb1 libxau-dev libxaw7 libxcb-dri2-0 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-randr0 libxcb-shape0 libxcb-shm0 libxcb-sync1
  libxcb-xfixes0 libxcb1-dev libcomposite1 libxdmcp-dev libxfixes3 libxft2 libxi6 libxinerama1 libxkbfile1 libxmu6 libxpm4 libxrandr2 libxrender1
  libxshmfence1 libxt-dev libxt6 libxtst6 libxv1 libxf86dg1 libxf86vm1 mesa-vulkan-drivers openjdk-11-jdk openjdk-11-jdk-headless openjdk-11-jre
  openjdk-11-jre-headless x11-common x11-utils x11proto-core-dev x11proto-dev xorg-sgml-doctools xtrans-dev
Suggested packages:
  cups-common libice-doc liblcms2-utils pscd lm-sensors libsm-doc libxcb-doc libxt-doc openjdk-11-demo openjdk-11-source visualvm
  libnss-mdns fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei | fonts-wqy-zenhei fonts-indic mesa-utils
The following NEW packages will be installed:
  at-spi2-core ca-certificates-java default-jdk default-jdk-headless default-jre default-jre-headless fontconfig-config fonts-dejavu-core
  fonts-dejavu-extra java-common libatkbridge2.0-0 libatk-wrapper-java libatk-wrapper-java-jni libatk1.0-0 libatspi2.0-0 libavahi-client3
  libavahi-common3 libcups2 libdrm-amdgpu1 libdrm-intel1 libdrm-nouveau2 libdrm-radeon1 libfontconfig1 libfontenc1 libgif7 libgl1
  libgl1-mesa-dri libglapi-mesa libglvnd0 libglx-mesa0 libglx0 libgraphite2-3 libharfbuzz0b libice-dev libice6 libjpeg-turbo8 libjpeg8 liblcms2-2
  libllvm12 libpcaccess0 libpccs1 libpthread-stubs0-dev libsensors-config libsensors5 libsm-dev libsm6 libvulkan1 libwayland-client0 libx11-dev
  libx11-xcb1 libxau-dev libxaw7 libxcb-dri2-0 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-randr0 libxcb-shape0 libxcb-shm0 libxcb-sync1
  libxcb-xfixes0 libxcb1-dev libcomposite1 libxdmcp-dev libxfixes3 libxft2 libxi6 libxinerama1 libxkbfile1 libxmu6 libxpm4 libxrandr2 libxrender1
  libxshmfence1 libxt-dev libxt6 libxtst6 libxv1 libxf86dg1 libxf86vm1 mesa-vulkan-drivers openjdk-11-jdk openjdk-11-jdk-headless openjdk-11-jre
  openjdk-11-jre-headless x11-common x11-utils x11proto-core-dev x11proto-dev xorg-sgml-doctools xtrans-dev
0 upgraded, 93 newly installed, 0 to remove and 0 not upgraded.
Need to get 304 MB of archives.
After this operation, 890 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/main amd64 libatspi2.0-0 amd64 2.36.0-2 [64.2 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/main amd64 x11-common all 1:7.7+19ubuntu14 [22.3 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/main amd64 libxtst6 amd64 2:1.2.3-1 [12.8 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/main amd64 at-spi2-core amd64 2.36.0-2 [48.7 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/main amd64 java-common all 0.72 [6816 B]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 libavahi-common-data amd64 0.7-4ubuntu7.1 [21.4 kB]

```

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```
ubuntu@ip-172-31-24-207:~$ sudo apt install maven -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
libaopalliance-java libapache-pom-java libatinject-jsr330-api-java libcdi-api-java libcommons-cli-java libcommons-io-java libcommons-lang3-java
libcommons-parent-java liberonimo-annotation-1.3-spec-java liberonimo-interceptor-3.0-spec-java libguava-java libguice-java
libhawtjni-runtime-java libjansi-java libjansi-native-java libjsr305-java libmaven-parent-java libmaven-resolver-java libmaven-shared-utils-java
libmaven3-core-java libplexus-cipher-java libplexus-classworlds-java libplexus-component-annotations-java libplexus-interpolation-java
libplexus-sec-dispatcher-java libplexus-utils2-java libtsu-inject-java libsisu-plexus-java libslf4j-java libwagon-file-java
libwagon-http-shaded-java libwagon-provider-api-java
Suggested packages:
libaopalliance-java-doc libatinject-jsr330-api-java-doc libservlet3.1-java libcommons-io-java-doc libcommons-lang3-java-doc libasm-java
libcglb-java libjsr305-java-doc libmaven-shared-utils-java-doc liblogback-java libplexus-cipher-java-doc libplexus-classworlds-java-doc
libplexus-sec-dispatcher-java-doc libplexus-utils2-java-doc junit4 testing libcommons-logging-java liblog4j1.2-java
The following NEW packages will be installed:
libaopalliance-java libapache-pom-java libatinject-jsr330-api-java libcdi-api-java libcommons-cli-java libcommons-io-java libcommons-lang3-java
libcommons-parent-java liberonimo-annotation-1.3-spec-java liberonimo-interceptor-3.0-spec-java libguava-java libguice-java
libhawtjni-runtime-java libjansi-java libjansi-native-java libjsr305-java libmaven-parent-java libmaven-resolver-java libmaven-shared-utils-java
libmaven3-core-java libplexus-cipher-java libplexus-classworlds-java libplexus-component-annotations-java libplexus-interpolation-java
libplexus-sec-dispatcher-java libplexus-utils2-java libtsu-inject-java libsisu-plexus-java libslf4j-java libwagon-file-java
libwagon-http-shaded-java libwagon-provider-api-java maven
0 upgraded, 33 newly installed, 0 to remove and 0 not upgraded.
Need to get 9208 kB of archives.
After this operation, 12.1 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 libapache-pom-java all 18.1 [4720 B]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 libatinject-jsr330-api-java all 1.0+ds1-5 [5348 B]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 liberonimo-interceptor-3.0-spec-java all 1.0.1-4fakesync [8616 B]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 libcdi-api-java all 1.2-2 [54.5 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 libcommons-cli-java all 1.4-1 [53.8 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 libcommons-parent-java all 43-1 [10.8 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/universe amd64 libcommons-io-java all 2.6-2ubuntu0.20.04.1 [198 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 libcommons-lang3-java all 3.8-2 [458 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 liberonimo-annotation-1.3-spec-java all 1.0-1 [10.7 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 libjsr305-java all 0.1+svn49-11 [27.0 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 libguava-java all 19.0-1 [2028 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 libaopalliance-java all 20070526-6 [9084 B]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 libguice-java all 4.2.1-1 [962 kB]
```

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```
ubuntu@ip-172-31-24-207:~$ sudo apt install maven -y
Setting up libatinject-jsr330-api-java (1.0+ds1-5) ...
Setting up libplexus-interpolation-java (1.26-1) ...
Setting up libplexus-sec-dispatcher-java (1.4-4) ...
Setting up libwagon-http-shaded-java (3.3.4-1) ...
Setting up libcdi-api-java (1.2-2) ...
Setting up libhawtjni-runtime-java (1.17-1) ...
Setting up libwagon-provider-api-java (3.3.4-1) ...
Setting up libmaven-parent-java (31-2) ...
Setting up libcommons-parent-java (43-1) ...
Setting up libmaven-resolver-java (1.4.1-1) ...
Setting up libguava-java (19.0-1) ...
Setting up libcommons-lang3-java (3.8-2) ...
Setting up libjansi-native-java (1.8-1) ...
Setting up libwagon-file-java (3.3.4-1) ...
Setting up libcommons-io-java (2.6-2ubuntu0.20.04.1) ...
Setting up libguice-java (4.2.1-1) ...
Setting up libjansi-java (1.18-1) ...
Setting up libmaven-shared-utils-java (3.3.0-1) ...
Setting up libtsu-inject-java (0.3.3-1) ...
Setting up libsisu-plexus-java (0.3.3-3) ...
Setting up libmaven3-core-java (3.6.3-1) ...
Setting up maven (3.6.3-1) ...
update-alternatives: using /usr/share/maven/bin/mvn to provide /usr/bin/mvn (mvn) in auto mode
ubuntu@ip-172-31-24-207:~$ wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo apt-key add -
OK
ubuntu@ip-172-31-24-207:~$ sudo sh -c 'echo deb https://pkg.jenkins.io/debian-stable binary/ > /etc/apt/sources.list.d/jenkins.list'
ubuntu@ip-172-31-24-207:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports InRelease
Ign:4 https://pkg.jenkins.io/debian-stable binary/ InRelease
Get:5 https://pkg.jenkins.io/debian-stable binary/ Release [2044 B]
Get:6 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]
Hit:7 http://security.ubuntu.com/ubuntu focal-security InRelease
Get:8 https://pkg.jenkins.io/debian-stable binary/ Packages [20.9 kB]
Fetched 23.8 kB in 0s (48.5 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-24-207:~$
```

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```

ubuntu@ip-172-31-24-207: ~
Setting up libguice-java (4.2.1-1) ...
Setting up libjansi-java (1.18-1) ...
Setting up libmaven-shared-utils-java (3.3.0-1) ...
Setting up libsisu-inject-java (0.3.3-1) ...
Setting up libsisu-plexus-java (0.3.3-3) ...
Setting up libmaven3-core-java (3.6.3-1) ...
Setting up maven (3.6.3-1) ...
update-alternatives: using /usr/share/maven/bin/mvn to provide /usr/bin/mvn (mvn) in auto mode
ubuntu@ip-172-31-24-207:~$ wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo apt-key add -
OK
ubuntu@ip-172-31-24-207:~$ sudo sh -c 'echo deb https://pkg.jenkins.io/debian-stable binary/ > /etc/apt/sources.list.d/jenkins.list'
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports InRelease
Ign:4 https://pkg.jenkins.io/debian-stable binary/ InRelease
Get:5 https://pkg.jenkins.io/debian-stable binary/ Release [2044 B]
Get:6 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]
Hit:7 http://security.ubuntu.com/ubuntu focal-security InRelease
Get:8 https://pkg.jenkins.io/debian-stable binary/ Packages [20.9 kB]
Fetched 23.8 kB in 0s (48.5 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-24-207:~$ sudo apt-get update
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  daemon net-tools
The following NEW packages will be installed:
  daemon jenkins net-tools
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 72.2 MB of archives.
After this operation, 73.5 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 daemon amd64 0.6.4-1build2 [96.3 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/main amd64 net-tools amd64 1.60+git20180626.aebd88e-1ubuntu1 [196 kB]
Get:3 https://pkg.jenkins.io/debian-stable binary/ jenkins 2.303.3 [71.9 MB]
70% [3 jenkins 51.1 MB/71.9 MB 71%]
3678 kB/s 5s

```

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## 4.8 Install Docker server in MobaXterm :-

```

ubuntu@ip-172-31-24-207: ~
Processing triggers for systemd (245.4-4ubuntu3.13) ...
ubuntu@ip-172-31-24-207:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports InRelease
Ign:4 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:5 https://pkg.jenkins.io/debian-stable binary/ Release
Hit:6 http://security.ubuntu.com/ubuntu focal-security InRelease
Reading package lists... Done
ubuntu@ip-172-31-24-207:~$ sudo apt-get install apt-transport-https ca-certificates curl gnupg lsb-release -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
lsb-release is already the newest version (11.1.0ubuntu2).
lsb-release set to manually installed.
ca-certificates is already the newest version (20210119~20.04.2).
ca-certificates set to manually installed.
curl is already the newest version (7.68.0-1ubuntu2.7).
curl set to manually installed.
gnupg is already the newest version (2.2.19-3ubuntu2.1).
gnupg set to manually installed.
The following NEW packages will be installed:
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 4680 B of additional disk space.
After this operation, 162 kB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/universe amd64 apt-transport-https all 2.0.6 [4680 B]
Fetched 4680 B in 0s (323 kB/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 98094 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.0.6_all.deb ...
Unpacking apt-transport-https (2.0.6) ...
Setting up apt-transport-https (2.0.6) ...
ubuntu@ip-172-31-24-207:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /usr/share/keyrings/docker-archive-keyring.gpg
ubuntu@ip-172-31-24-207:~$ echo "deb [arch=amd64 signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
ubuntu@ip-172-31-24-207:~$ 

```

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```

ubuntu@ip-172-31-24-207: ~
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports InRelease
Get:4 https://download.docker.com/linux/ubuntu focal InRelease [57.7 kB]
Ign:5 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:6 https://pkg.jenkins.io/debian-stable binary/ Release
Hit:7 http://security.ubuntu.com/ubuntu focal-security InRelease
Get:8 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages [12.9 kB]
Fetched 70.6 kB in 1s (129 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-24-207:~$ sudo apt-get install docker-ce docker-ce-cli containerd.io
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  docker-ce-rootless-extras docker-scan-plugin pigz slirp4netns
Suggested packages:
  aufs-tools cgroupfs-mount | cgroup-lite
The following NEW packages will be installed:
  containerd.io docker-ce docker-ce-cli docker-ce-rootless-extras docker-scan-plugin pigz slirp4netns
0 upgraded, 7 newly installed, 0 to remove and 0 not upgraded.
Need to get 95.3 MB of archives.
After this operation, 402 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 pigz amd64 2.4-1 [57.4 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 slirp4netns amd64 0.4.3-1 [74.3 kB]
Get:3 https://download.docker.com/linux/ubuntu focal/stable amd64 containerd.io amd64 1.4.12-1 [23.7 MB]
Get:4 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce-cli amd64 5:20.10.11~3-0~ubuntu-focal [38.8 kB]
Get:5 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce amd64 5:20.10.11~3-0~ubuntu-focal [21.2 kB]
Get:6 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce-rootless-extras amd64 5:20.10.11~3-0~ubuntu-focal [7920 kB]
Get:7 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-scan-plugin amd64 0.9.0~ubuntu-focal [3518 kB]
Fetched 95.3 MB in 2s (61.1 MB/s)
Selecting previously unselected package pigz.
(Reading database ... 98098 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.4-1_amd64.deb ...
Unpacking pigz (2.4-1) ...
Selecting previously unselected package containerd.io.
Preparing to unpack .../1-containerd.io_1.4.12-1_amd64.deb ...
Unpacking containerd.io (1.4.12-1) ...

```

## 4.9 Run Jenkins on port /0.0.0.0:8080

**Getting Started**

## Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log ([not sure where to find it?](#)) and this file on the server:

```
/var/lib/jenkins/secrets/initialAdminPassword
```

Please copy the password from either location and paste it below.

**Administrator password**

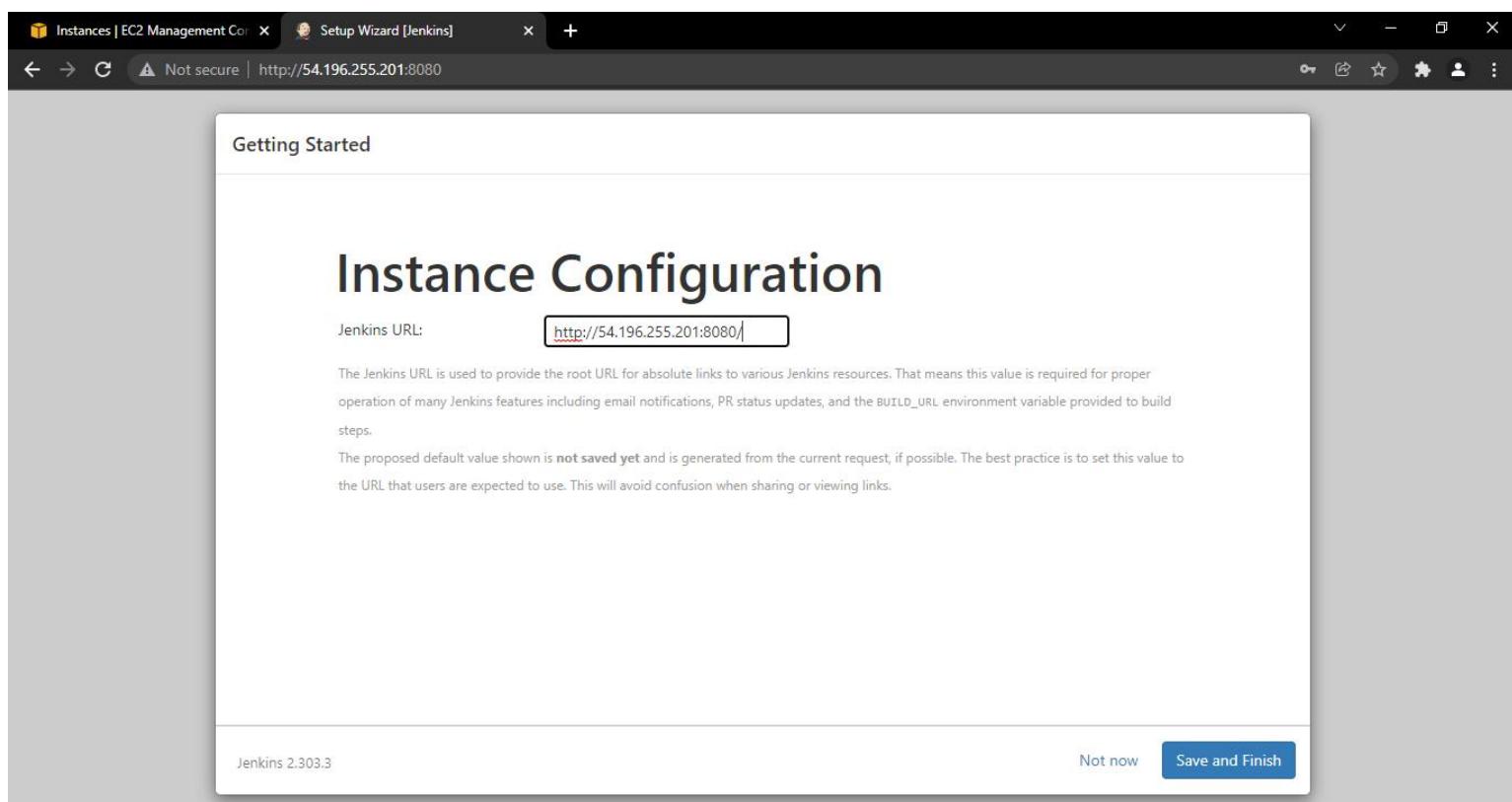
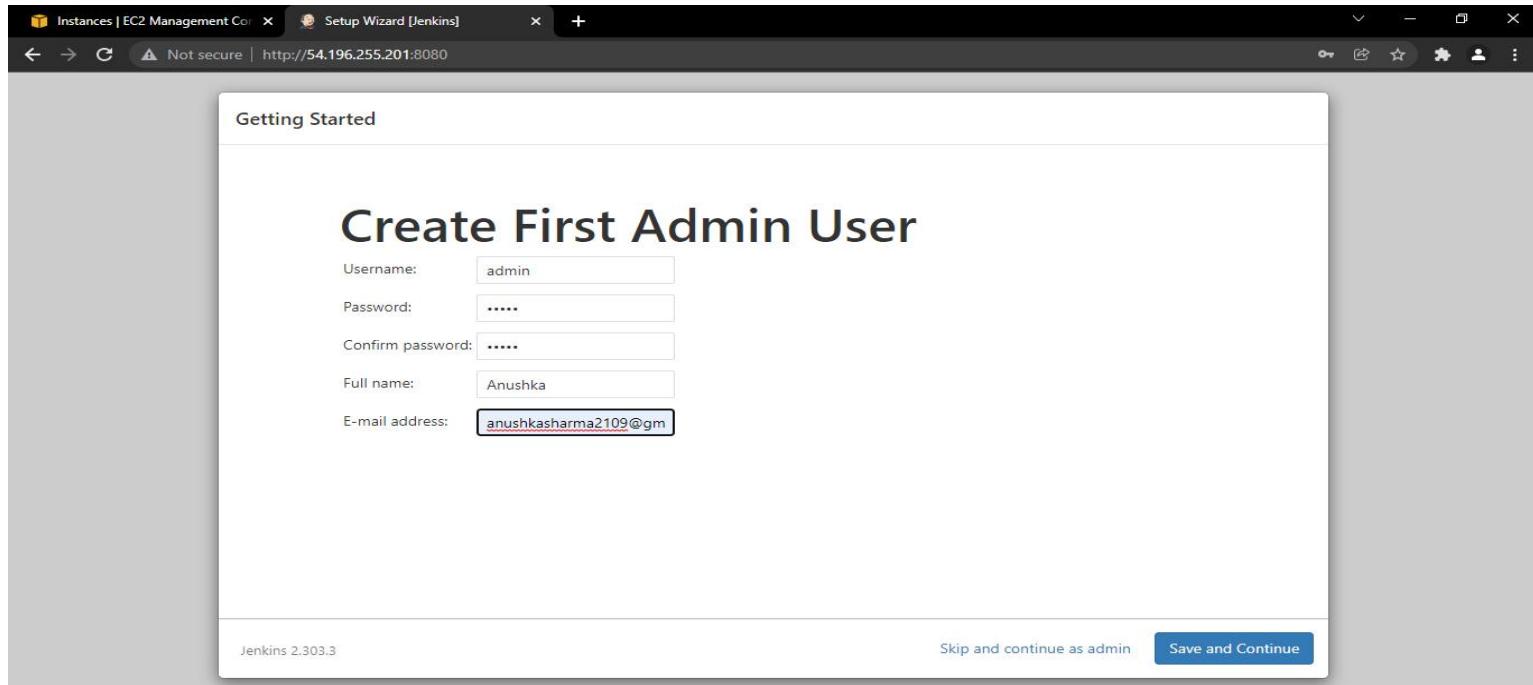
**Continue**

- Put the Administrator password as shown in the picture -

```
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socket.
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for systemd (245.4-4ubuntu3.13) ...
ubuntu@ip-172-31-24-207:~$ sudo cat /var/lib/jenkins/secrets/initialAdminPassword
3a8b3ac6a6f9495dbc6600ff130d0b24
ubuntu@ip-172-31-24-207:~$ 
ubuntu@ip-172-31-24-207:~$
```

#### 4.10 Put Username and Password in Jenkins as :

- Username - admin
- Password - admin



The screenshot shows the Jenkins dashboard at <http://54.196.255.201:8080>. The left sidebar contains links for New Item, People, Build History, Manage Jenkins, My Views, Lockable Resources, and New View. Under Build Queue, it says "No builds in the queue." Under Build Executor Status, it shows 1 Idle and 2 Idle. The main content area features a "Welcome to Jenkins!" header, a sub-header "Start building your software project", and a "Create a job" button. Below this is a section titled "Set up a distributed build" with "Set up an agent" and "Configure a cloud" buttons, and a link "Learn more about distributed builds". A "search" bar is at the top right.

The screenshot shows the "Enter an item name" dialog in Jenkins. The input field contains "icin-bank-pipeline" and is labeled as a "Required field". Below the input field are four project types: "Freestyle project", "Pipeline", "Multi-configuration project", and "Folder". The "Freestyle project" icon is selected. The "Freestyle project" description states: "This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build." The "Pipeline" description states: "Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type." The "Multi-configuration project" description states: "Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc." The "Folder" description states: "A container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders." An "OK" button is visible at the bottom left of the dialog.

#### 4.11 Put the git link in Repository URL :

<https://github.com/AnushkaSharma9/Capstone-Project-ICIN-Online-Banking.git>

Instances | EC2 Management Con x icin-bank-pipeline Config [Jenkin x AnushkaSharma9/Capstone-Proj x + Not secure | http://54.196.255.201:8080/job/icin-bank-pipeline/configure

Dashboard > icin-bank-pipeline >

General Build Triggers Advanced Project Options Pipeline

Advanced...

### Pipeline

Definition

Pipeline script from SCM

SCM

Git

Repositories

Repository URL

https://github.com/AnushkaSharma9/Capstone-Project-ICIN-Online-Banking.git

Credentials

- none - Add

Advanced...

Add Repository

Save Apply

Instances | EC2 Management Con x icin-bank-pipeline Config [Jenkin x AnushkaSharma9/Capstone-Proj x + Not secure | http://54.196.255.201:8080/job/icin-bank-pipeline/configure

Dashboard > icin-bank-pipeline >

General Build Triggers Advanced Project Options Pipeline

Branch Specifier (blank for 'any')

\*/master

Add Branch

Repository browser

(Auto)

Additional Behaviours

Add

Script Path

Backend Final/icin\_bank\_final/Jenkinsfile

Lightweight checkout

Pipeline Syntax

Save Apply

Instances | EC2 Management Con x icin-bank-pipeline [Jenkins] x Capstone-Project-ICIN-Online-B x +

Not secure | http://54.196.255.201:8080/job/icin-bank-pipeline/

# Jenkins

Dashboard > icin-bank-pipeline >

Back to Dashboard

Status

Changes

Build Now

Configure

Delete Pipeline

Full Stage View

Rename

Pipeline Syntax

Build History trend ^

find

Atom feed for all Atom feed for failures

## Pipeline icin-bank-pipeline

This is a Pipeline for Online Banking System called ICIN Bank.

Recent Changes

### Stage View

No data available. This Pipeline has not yet run.

### Permalinks

[Edit description](#)

[Disable Project](#)

Instances | EC2 Management Con x icin-bank-pipeline [Jenkins] x Capstone-Project-ICIN-Online-B x +

Not secure | http://54.196.255.201:8080/job/icin-bank-pipeline/

# Jenkins

Dashboard > icin-bank-pipeline >

Back to Dashboard

Status

Changes

Build Now

Configure

Delete Pipeline

Full Stage View

Rename

Pipeline Syntax

Git Polling Log

Build History trend ^

find

#1 Nov 19 22:32 No Changes

54.196.255.201:8080/job/icin-bank-pipeline/changes

## Pipeline icin-bank-pipeline

This is a Pipeline for Online Banking System called ICIN Bank.

Recent Changes

### Stage View

Declarative: Checkout SCM	Maven Compile	Maven Test	Maven Build	Docker Build	Docker Deploy
212ms	53ms	44ms	53ms	56ms	40ms

Average stage times:  
(Average full run time: ~1s)

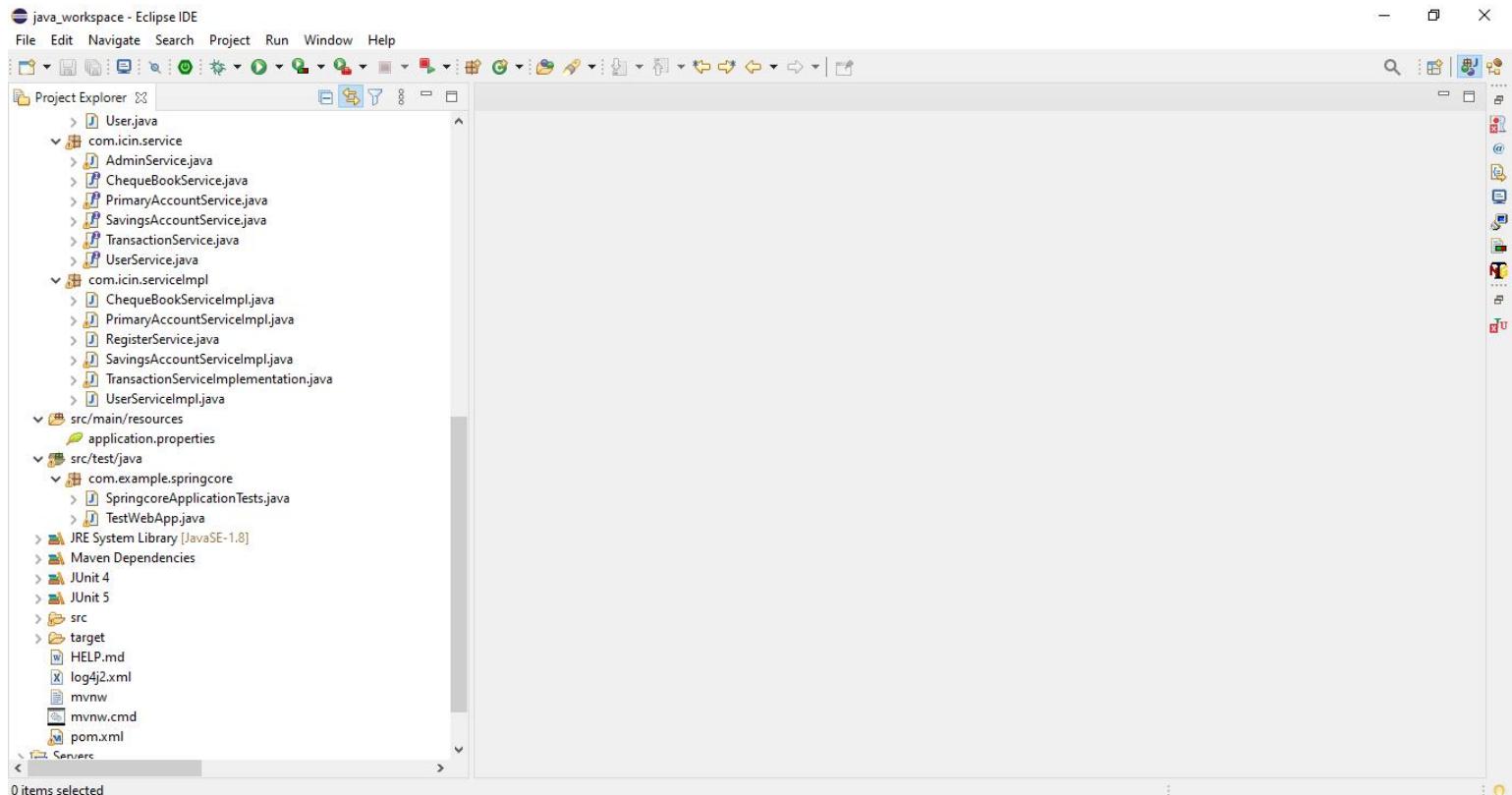
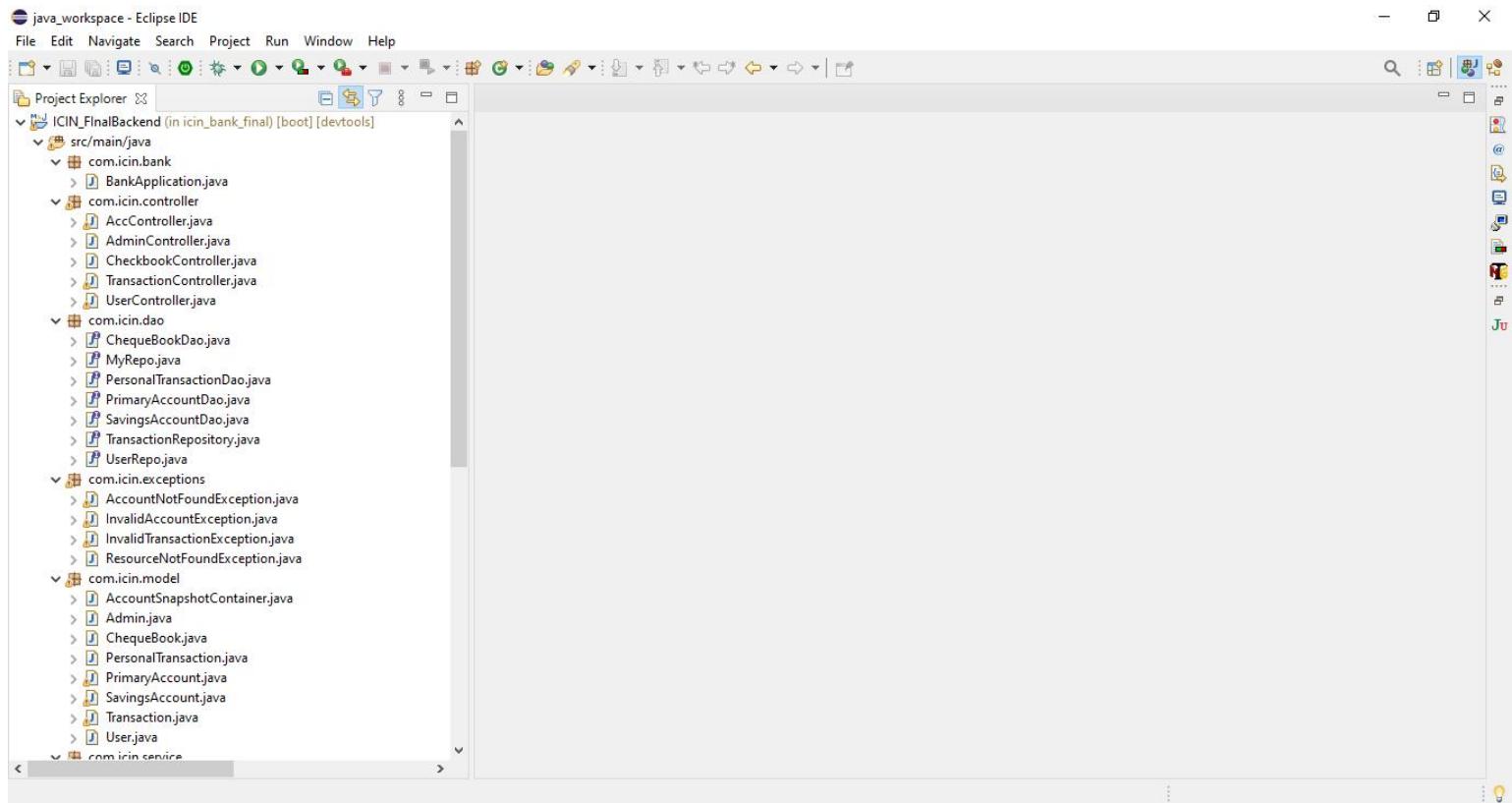
#1 Nov 19 22:32 No Changes

212ms 53ms 44ms 53ms 56ms 40ms

### Permalinks

- Last build (#1), 27 sec ago
- Last stable build (#1), 27 sec ago

## ✧ DIRECTORY STRUCTURE / PACKAGE



## ✧ SCREENSHOTS OF TESTING USING JUNIT -

```

1 package com.example.springcore;
2
3
4 import org.junit.jupiter.api.Test;
5
6
7 @RunWith(SpringRunner.class)
8 @WebAppConfiguration
9 @SpringBootTest(classes=BankApplication.class)
10 public class SpringcoreApplicationTests {
11
12     @Test
13     void contextLoads() {
14
15     }
16
17 }
18
19
20
21 }
22

```

## ✧ SCREENSHOTS OF TestWebApp.java -

```

1 package com.example.springcore;
2
3
4
5 //import static org.junit.jupiter.api.Assertions.*;
6 //import org.junit.jupiter.api.Test;
7
8 import static org.springframework.test.web.servlet.request.MockMvcRequestBuilders.get;
9
10
11 //TestMethodOrder(OrderAnnotation.class)
12 //FixMethodOrder(MethodSorters.NAME_ASCENDING)
13 public class TestWebApp extends SpringcoreApplicationTests {
14
15     /*@Test
16     void test() {
17         fail("Not yet implemented");
18     }*/
19
20     @Autowired
21     private WebApplicationContext webApplicationContext;
22
23
24     private MockMvc mockMvc;
25
26     @Before
27     public void setup() {
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53

```

java\_workspace - ICIN\_FinalBackend/src/test/java/com/example/springcore/TestWebApp.java - Eclipse IDE

```
50     private MockMvc mockMvc;
51
52     @Before
53     public void setup() {
54         mockMvc = MockMvcBuilders.webAppContextSetup(webApplicationContext).build();
55     }
56
57
58
59     @Test()
60     public void aTestHello() throws Exception{
61         mockMvc.perform(get("/hello")).andExpect(status().isOk()).andDo(print());
62     }
63
64
65     @Test //test register user1
66     public void bTestRegister() throws Exception {
67
68         String content = "{\r\n" +
69             "   \"fullname\":\"test\",\\r\\n" +
70             "   \"surname\":\"t\",\\r\\n" +
71             "   \"mailid\":\"test@gmail.com\",\\r\\n" +
72             "   \"phonenumber\":9876543210,\\r\\n" +
73             "   \"address\":\"chennai\",\\r\\n" +
74             "   \"password\":\"test1234\"\\r\\n" +
75             "   \\r\\n" +
76         "}";
    
```

java\_workspace - ICIN\_FinalBackend/src/test/java/com/example/springcore/TestWebApp.java - Eclipse IDE

```
63
64
65     @Test //test register user1
66     public void bTestRegister() throws Exception {
67
68         String content = "{\r\n" +
69             "   \"fullname\":\"test\",\\r\\n" +
70             "   \"surname\":\"t\",\\r\\n" +
71             "   \"mailid\":\"test@gmail.com\",\\r\\n" +
72             "   \"phonenumber\":9876543210,\\r\\n" +
73             "   \"address\":\"chennai\",\\r\\n" +
74             "   \"password\":\"test1234\"\\r\\n" +
75             "   \\r\\n" +
76         "}";
77
78         RequestBuilder requestBuilder = MockMvcRequestBuilders.post("/register")
79             .accept(MediaType.APPLICATION_JSON_VALUE).content(content).contentType(MediaType.APPLICATION_JSON_VALUE);
80         ResultActions result = mockMvc.perform(requestBuilder).andExpect(status().isOk()).andDo(print());
81     }
82
83
84     @Test //test register user2
85     public void cTestRegister1() throws Exception {
86         String content = "{\r\n" +
87             "   \"fullname\":\"test1\",\\r\\n" +
88             "   \"surname\":\"t1\",\\r\\n" +
89             "   \"mailid\":\"test1@gmail.com\",\\r\\n" +
    
```

java\_workspace - ICIN\_FinalBackend/src/test/java/com/example/springcore/TestWebApp.java - Eclipse IDE

```
84 @Test //test register user
85 public void cTestRegister1() throws Exception {
86     String content = "{\r\n" +
87         "    \"fullname\":\"test1\",\\r\\n" +
88         "    \"surname\":\"t1\",\\r\\n" +
89         "    \"mailid\":\"test1@gmail.com\",\\r\\n" +
90         "    \"phonenumber\":1234567890,\\r\\n" +
91         "    \"address\":\"chennai\",\\r\\n" +
92         "    \"password\":\"testing1234\"\\r\\n" +
93         \"\\r\\n" +
94     "}";
95     RequestBuilder requestBuilder = MockMvcRequestBuilders.post("/register")
96         .accept(MediaType.APPLICATION_JSON_VALUE).content(content).contentType(MediaType.APPLICATION_JSON_VALUE);
97
98     ResultActions result = mockMvc.perform(requestBuilder).andExpect(status().isOk()).andDo(print());
99 }
100
101
102
103 @Test //test admin login
104 public void dTestAdmin1() throws Exception {
105
106     String content = "{\r\n" +
107         "    \"emailid\":\"admin\",\\r\\n" +
108         "    \"password\":\"admin\"\\r\\n" +
109     "}";
110     RequestBuilder requestBuilder = MockMvcRequestBuilders.post("/admin")
```

java\_workspace - ICIN\_FinalBackend/src/test/java/com/example/springcore/TestWebApp.java - Eclipse IDE

```
102
103 @Test //test admin login
104 public void dTestAdmin1() throws Exception {
105
106     String content = "{\r\n" +
107         "    \"emailid\":\"admin\",\\r\\n" +
108         "    \"password\":\"admin\"\\r\\n" +
109     "}";
110     RequestBuilder requestBuilder = MockMvcRequestBuilders.post("/admin")
111         .accept(MediaType.APPLICATION_JSON_VALUE).content(content).contentType(MediaType.APPLICATION_JSON_VALUE);
112
113     ResultActions result = mockMvc.perform(requestBuilder).andExpect(status().isOk()).andDo(print());
114 }
115
116
117
118 @Test //test primary deposit
119 public void eTestPrimaryDeposit() throws Exception{
120     mockMvc.perform(get("/deposit/{accType}/{accNo}/{amount}","Primary", 22113346,5000L))
121         .andExpect(status().isOk()).andDo(MockMvcResultHandlers.print());
122 }
123
124
125
126 @Test //test savings deposit
127 public void fTestSavingsDeposit() throws Exception{
128     mockMvc.perform(get("/deposit/{accType}/{accNo}/{amount}","Savings", 11223344,5000L))
```

java\_workspace - ICIN\_FinalBackend/src/test/java/com/example/springcore/TestWebApp.java - Eclipse IDE

```
126@ Test //test savings deposit
127public void fTestSavingsDeposit() throws Exception{
128    mockMvc.perform(get("/deposit/{accType}/{accNo}/{amount}","Savings", 11223345,5000L))
        .andExpect(status().isOk()).andDo(MockMvcResultHandlers.print());
129}
130}
131}
132}
133@ Test //test create cheque request
134public void gTestCreateCheque() throws Exception {
135    String content = "{\r\n" +
136        "    \"id\":1,\r\n" +
137        "    \"fullname\":\"test\", \r\n" +
138        "    \"surname\":\"t\", \r\n" +
139        "    \"mailid\":\"test@gmail.com\", \r\n" +
140        "    \"phonenumber\":9876543210, \r\n" +
141        "    \"address\":\"chennai\", \r\n" +
142        "    \"password\":\"test1234\" \r\n" +
143    "}";
144}
145    RequestBuilder requestBuilder = MockMvcRequestBuilders.post("/createcheque")
        .accept(MediaType.APPLICATION_JSON_VALUE).content(content).contentType(MediaType.APPLICATION_JSON_VALUE);
146}
147}
148ResultActions result = mockMvc.perform(requestBuilder).andExpect(status().isOk()).andDo(print());
149}
150}
151}
```

java\_workspace - ICIN\_FinalBackend/src/test/java/com/example/springcore/TestWebApp.java - Eclipse IDE

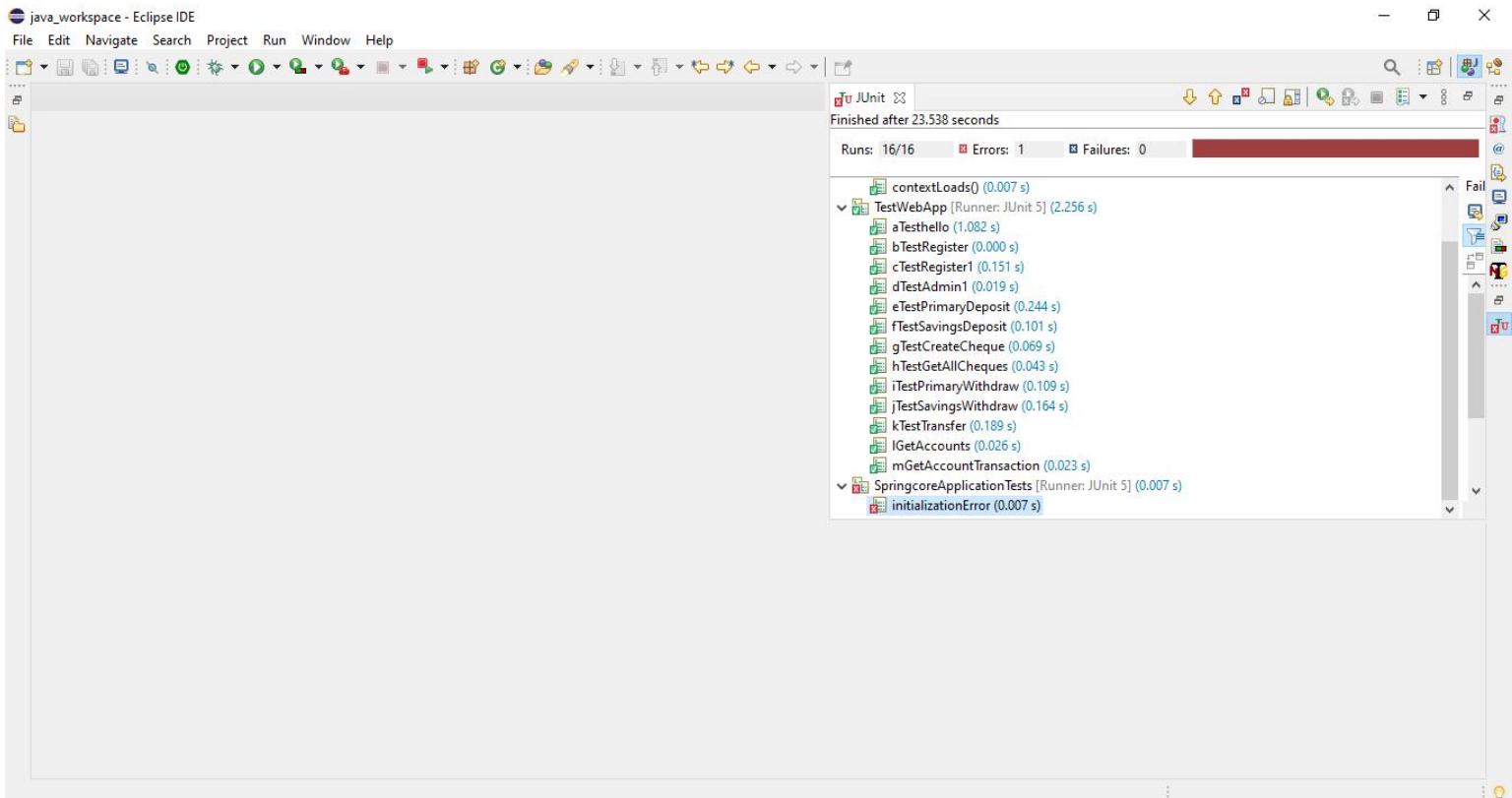
```
162}
163@ Test //withdraw from savings account
164public void jTestSavingsWithdraw() throws Exception{
165    mockMvc.perform(get("/withdraw/{accType}/{accNo}/{amount}","Savings", 11223345,5000L))
        .andExpect(status().isOk()).andDo(MockMvcResultHandlers.print());
166}
167}
168}
169}
170@ Test //test transfer amount
171public void kTestTransfer() throws Exception{
172}
173    String content = "{\r\n" +
174        "    \"transactionAmount\":2000, \r\n" +
175        "    \"sourceAccountnumber\":\"22113345\", \r\n" +
176        "    \"destinationAccountnumber\":\"22113346\", \r\n" +
177        "    \"IFSC\":\"abc1234\" \r\n" +
178    "}";
179    RequestBuilder requestBuilder = MockMvcRequestBuilders.post("/transfer")
        .accept(MediaType.APPLICATION_JSON_VALUE).content(content).contentType(MediaType.APPLICATION_JSON_VALUE);
180}
181ResultActions result = mockMvc.perform(requestBuilder).andExpect(status().isOk()).andDo(print());
182}
183}
184}
185@ Test //test getAllAccounts
186public void lGetAccounts() throws Exception{
187    mockMvc.perform(get("/accounts")).andExpect(status().isOk()).andDo(MockMvcResultHandlers.print());
188}
```

java\_workspace - ICIN\_FinalBackend/src/test/java/com/example/springcore/TestWebApp.java - Eclipse IDE

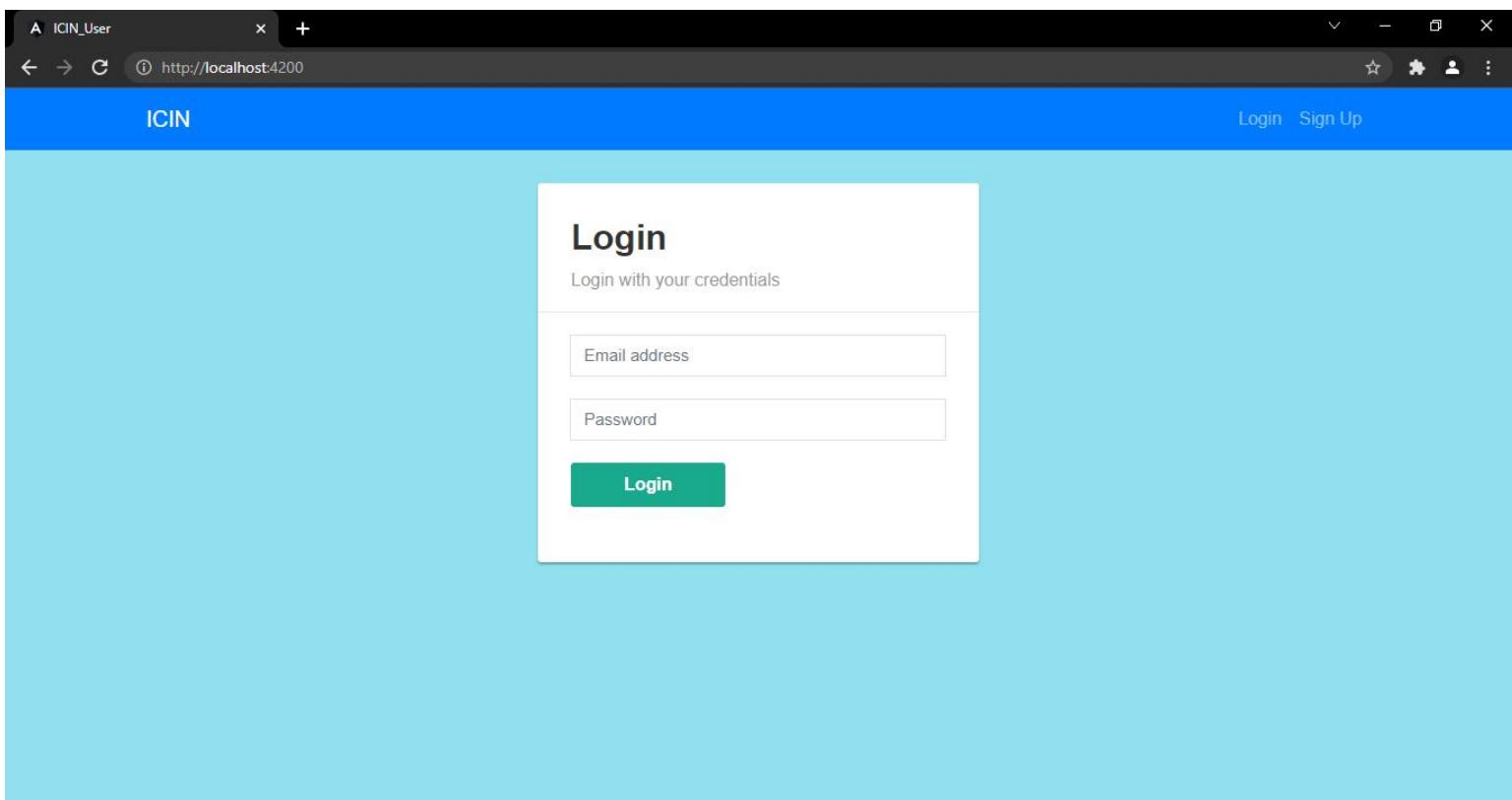
```
File Edit Source Refactor Navigate Search Project Run Window Help
SpringcoreApplicationTests.java TestWebApp.java
175     "sourceAccountnumber\":\"22113345\",\\r\\n" +
176     "destinationAccountnumber\":\"22113346\",\\r\\n" +
177     "IFSC\":\"abc1234\"\\r\\n" +
178   "}";
179 RequestBuilder requestBuilder = MockMvcRequestBuilders.post("/transfer")
180   .accept(MediaType.APPLICATION_JSON_VALUE).content(content).contentType(MediaType.APPLICATION_JSON_VALUE);
181 ResultActions result = mockMvc.perform(requestBuilder).andExpect(status().isOk()).andDo(print());
182 }
183
184 @Test //test getAllAccounts
185 public void lGetAccounts() throws Exception{
186   mockMvc.perform(get("/accounts")).andExpect(status().isOk()).andDo(MockMvcResultHandlers.print());
187 }
188
189 @Test //test getAllTransactions
190 public void mGetAccountTransaction() throws Exception{
191   mockMvc.perform(get("/accounts/{accountId}/transactions",22113345)).andExpect(status().isOk()).andDo(MockMvcResultH
192 }
193
194
195
196
197
198
199
200 }
```

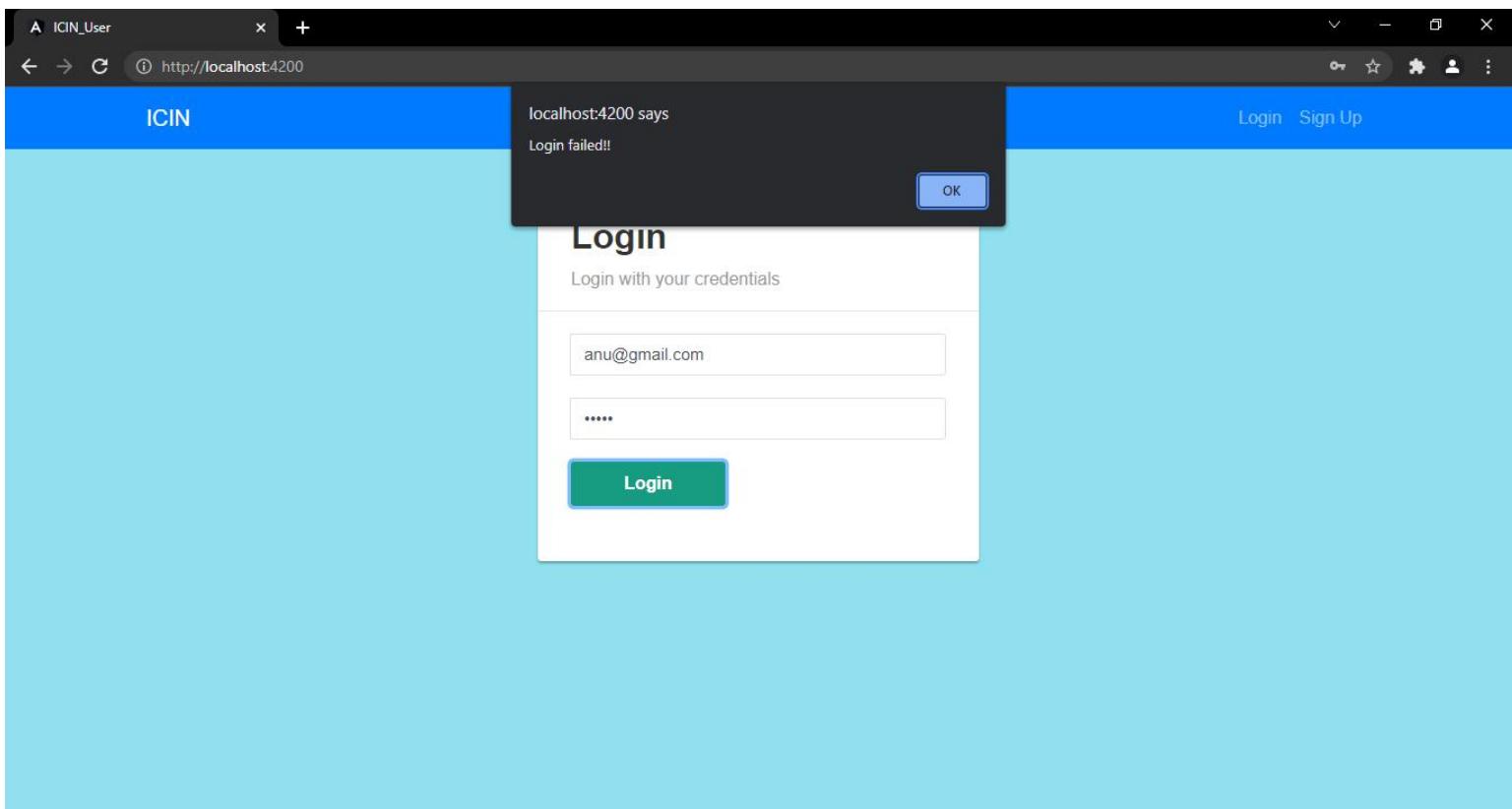
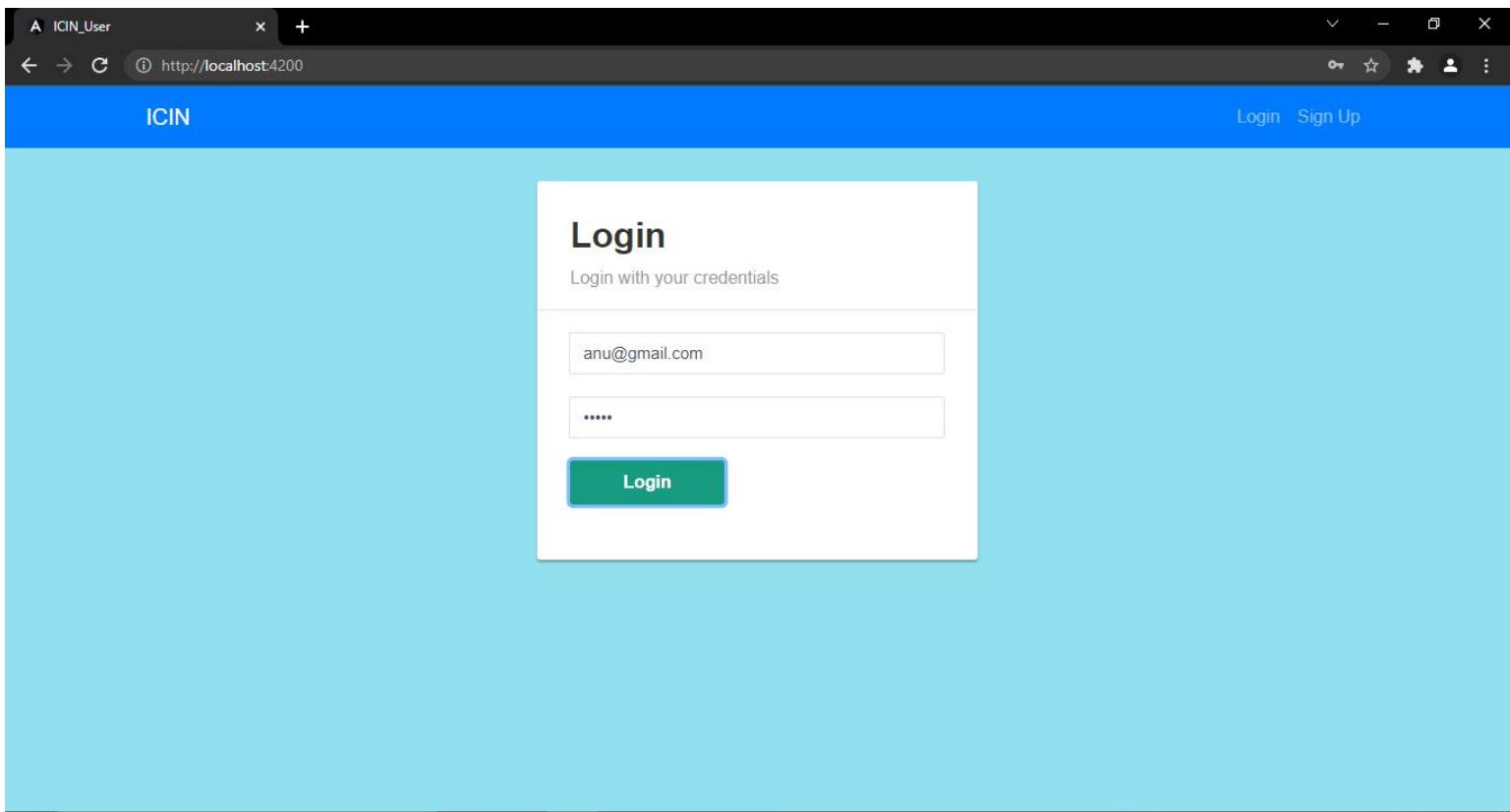
java\_workspace - Eclipse IDE

```
File Edit Navigate Search Project Run Window Help
JUnit
Finished after 23.538 seconds
Runs: 16/16 Errors: 1 Failures: 0
TestWebApp [Runner: JUnit 5] (0.218 s)
  contextLoads() (0.218 s)
SpringcoreApplicationTests [Runner: JUnit 5] (0.007 s)
  contextLoads() (0.007 s)
TestWebApp [Runner: JUnit 5] (2.256 s)
  aTestHello (1.082 s)
  bTestRegister (0.000 s)
  cTestRegisterI (0.151 s)
  dTestAdmin1 (0.019 s)
  eTestPrimaryDeposit (0.244 s)
  fTestSavingDeposit (0.101 s)
  gTestCreateCheque (0.069 s)
  hTestGetAllCheques (0.043 s)
  iTestPrimaryWithdraw (0.109 s)
  jTestSavingsWithdraw (0.164 s)
  kTestTransfer (0.189 s)
  lGetAccounts (0.026 s)
```



- ✧ **SCREENSHOTS OF OUTPUT**
- ✧ **SCREENSHOTS OF USER / ICIN PORTAL**





A ICIN\_User X + ⌂ http://localhost:4200/register

ICIN Login Sign Up

## Sign Up

Please fill in this form to create an account!

Anushka

Sharma

**Next**

A ICIN\_User X + ⌂ http://localhost:4200/register/contactDetails

ICIN Login Sign Up

## Sign Up

Please fill in this form to create an account!

anushka@gmail.com

7894561233

**Next**

A ICIN\_User X + ⌂ http://localhost:4200/register/kycDetails

ICIN Login Sign Up

## Sign Up

Please fill in this form to create an account!

**Next**

A ICIN\_User X + ⌂ http://localhost:4200/register/addressDetails

ICIN Login Sign Up

## Sign Up

Please fill in this form to create an account!

**Next**

A ICIN\_User X + http://localhost:4200/register/userRegistration

ICIN

Login Sign Up

## Sign Up

Please fill in this form to create an account!

Anushka

\*\*\*\*\*

\*\*\*\*\*

I accept the [Terms of Use & Privacy Policy](#)

**Sign Up**

A ICIN\_User X + http://localhost:4200/user/home

ICIN Home Accounts Transfer Request Anushka

### Primary Account 0 Rs

[View Details](#)

### Deposit

[Go to deposits](#)

### Withdrawal

[Go to Withdrawal](#)

### Saving Account 0 Rs

[View Details](#)

A ICIN\_User X + http://localhost:4200/user/depositFund

ICIN Home Accounts ▾ Transfer Request ▾ Anushka ▾

Account type

Primary Account

Balance

0

Amount to be deposited

20000

Deposit Money

A ICIN\_User X + http://localhost:4200/user/depositFund

ICIN Home Accounts ▾ Transfer Anushka ▾

localhost4200 says

Money deposited successfully!!

OK

Account type

Primary Account

Balance

0

Amount to be deposited

20000

Deposit Money

A ICIN\_User X + http://localhost:4200/user/withdrawFund

ICIN Home Accounts ▾ Transfer Request ▾ Anushka ▾

Please select your account type

Primary Account

Balance

20000

Amount to be withdrawn

200

Withdraw Money

A ICIN\_User X + http://localhost:4200/user/withdrawFund

ICIN Home Accounts ▾ Transfer Anushka ▾

localhost:4200 says

Money Withdrawn successfully!!

OK

Please select your account type

Primary Account

Balance

20000

Amount to be withdrawn

200

Withdraw Money

A ICIN\_User X + http://localhost:4200/user/depositFund

ICIN Home Accounts ▾ Transfer Request ▾ Anushka ▾

Account type

Saving Account

Balance

0

Amount to be deposited

5000

Deposit Money

A ICIN\_User X + http://localhost:4200/user/depositFund

ICIN Home Accounts ▾ Transfer Anushka ▾

localhost:4200 says

Money deposited successfully!!

OK

Account type

Saving Account

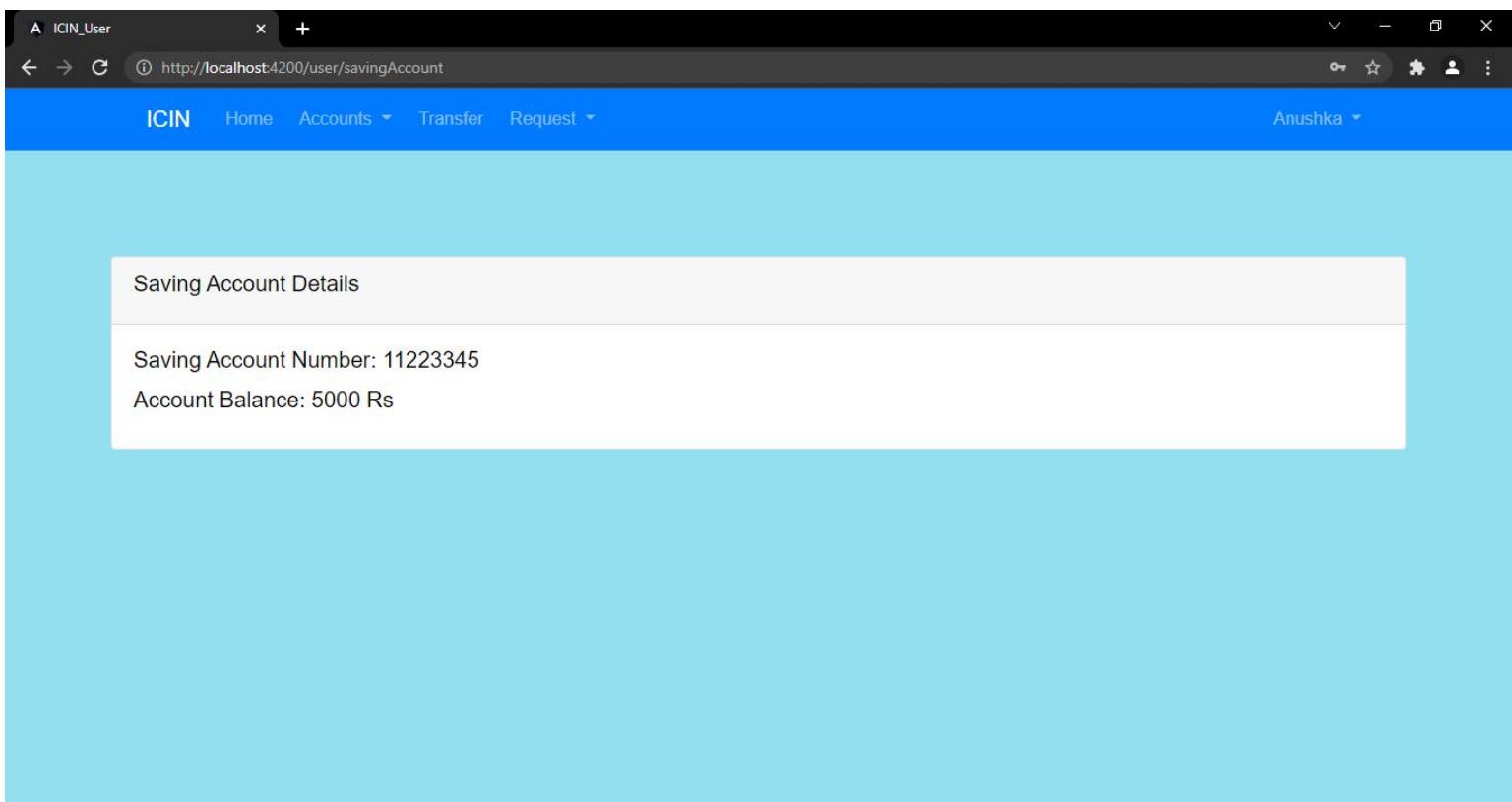
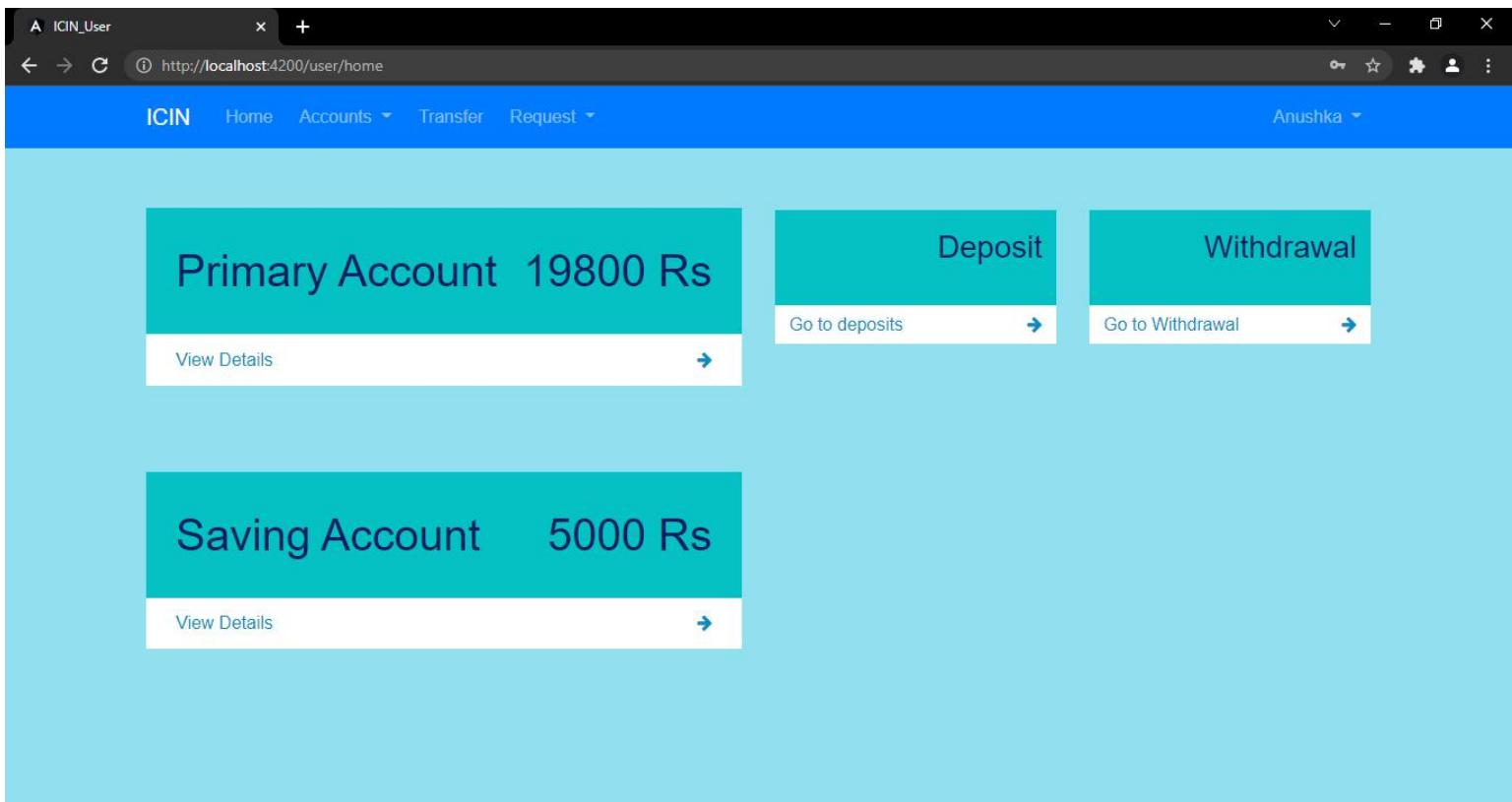
Balance

0

Amount to be deposited

5000

Deposit Money



A ICIN\_User X + http://localhost:4200/user/transferFundRequest

ICIN Home Accounts Transfer Request Anushka

Account Type  
Primary Account

Balance  
19800

Beneficiary Name  
SWH

Beneficiary's Account Number  
ICIN2211

Beneficiary IFSC Code  
ICIN332

Amount to be transferred  
2000

A ICIN\_User X + http://localhost:4200/user/transferFundRequest

Beneficiary Name  
SWH

Beneficiary's Account Number  
ICIN2211

Beneficiary IFSC Code  
ICIN332

Amount to be transferred  
2000

Transfer Type  
IMPS

Optional Message

Transfer Funds

A ICIN\_User x + v - o X http://localhost:4200/user/transferFundRequest

localhost:4200 says  
Transaction Successfull

OK

Beneficiary Name: EWEW

Beneficiary's Account Number: 22113345

Beneficiary IFSC Code: ICI

Amount to be transferred: 23

Transfer Type: IMPS

Optional Message:

Transfer Funds

A ICIN\_User x + v - o X http://localhost:4200/user/primaryAccount

ICIN Home Accounts ▾ Transfer Request ▾ Anushka ▾

Primary Account: 22113345

Account Balance: 19800 Rs

Recent Transactions

Transaction Id	Description	Beneficiary's Account Number	Amount Transferred
1	Fund Transfer	22113345	23 Rs

A ICIN\_User X + http://localhost:4200/user/chequeBookRequest

ICIN Home Accounts Transfer Request Anushka

localhost:4200 says  
Chequebook request submitted

OK

Please select your account type

Saving Account

Optional Description

Submit Request

A ICIN\_User X + http://localhost:4200/user/profile

ICIN Home Accounts Transfer Request Anushka

User photo  
Anushka's profile

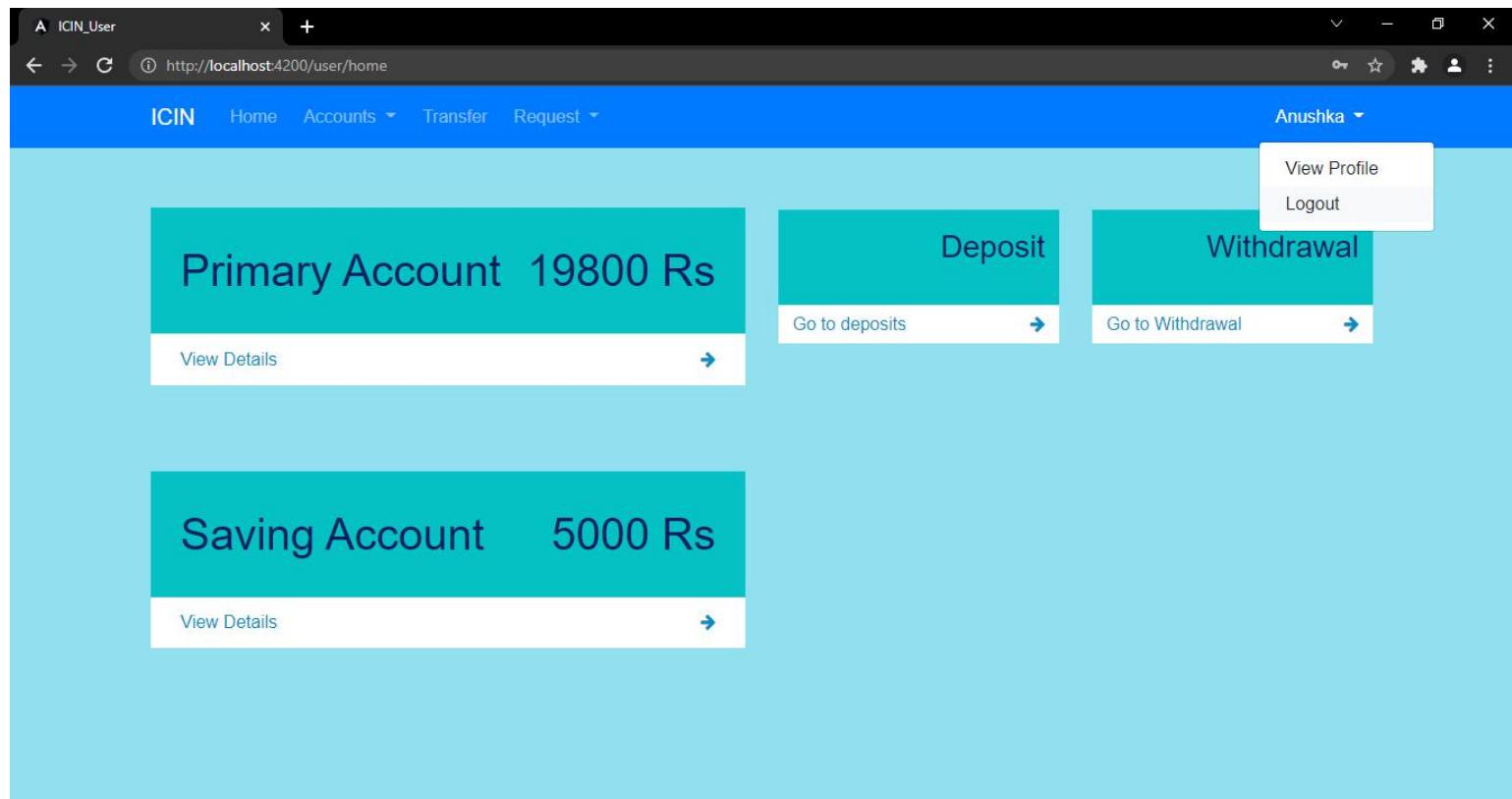
First Name: Anushka  
Last Name: Sharma  
Mobile Number: 7894561233  
Email id: anushka@gmail.com  
Address : 21 street f hoff Agra up 34343

Primary Account

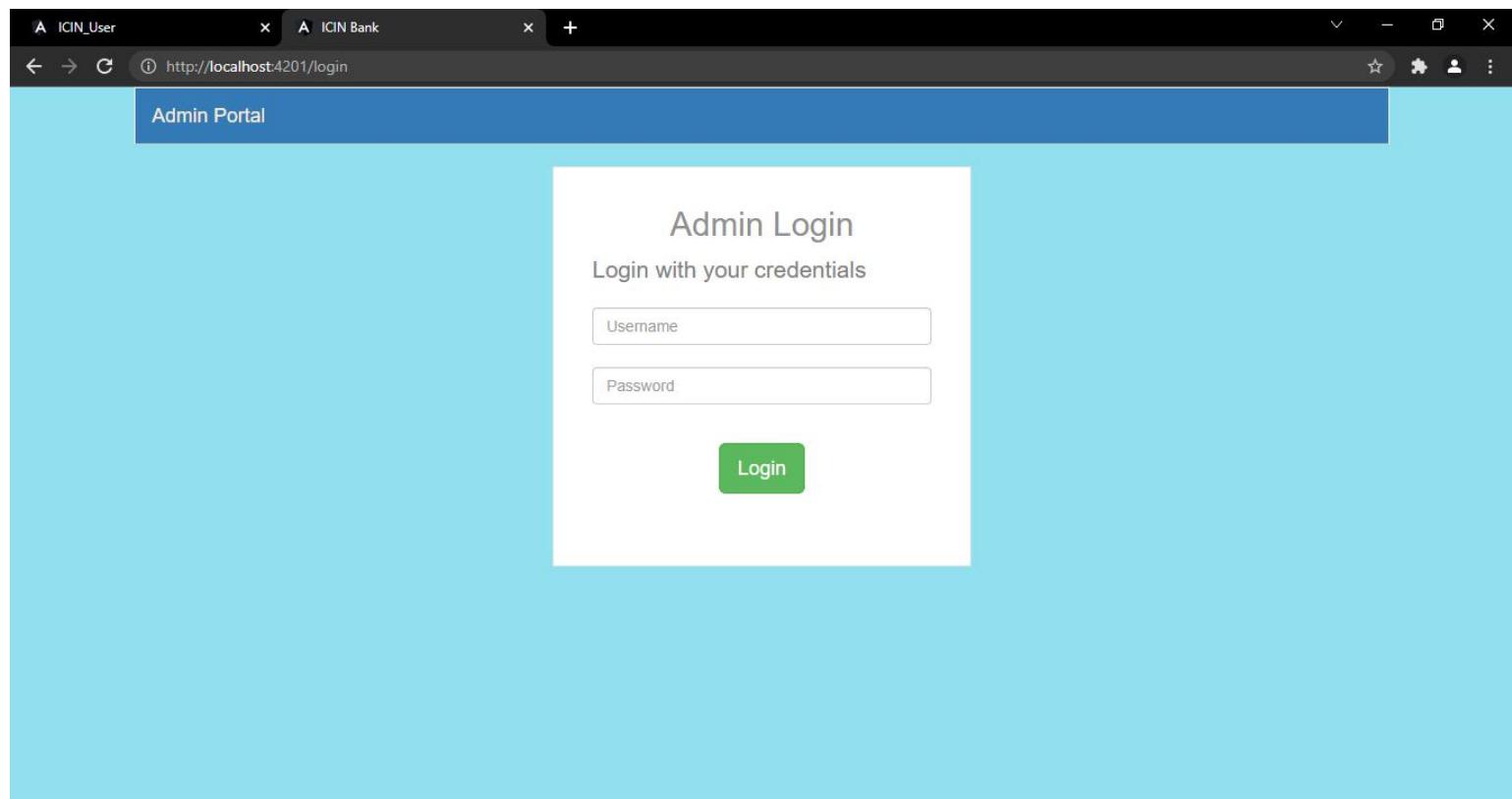
Account Number: 22113345  
Account Balance: 19800 Rs

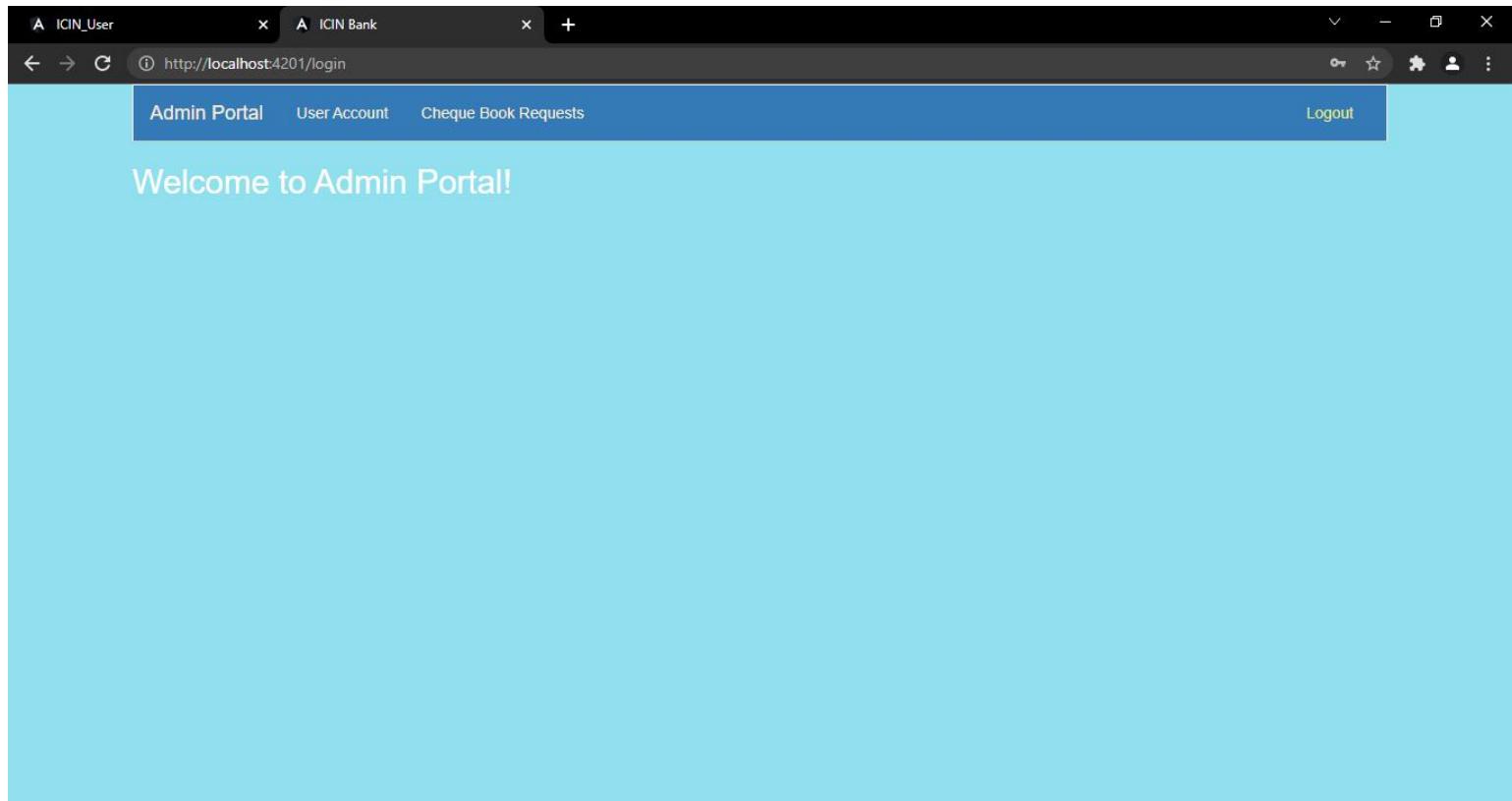
Saving Account

Account Number: 11223345  
Account Balance: 5000 Rs



## ✧ SCREENSHOTS OF ADMIN PORTAL





First Name	Last Name	Email	Phone	Primary Account	Savings Account	Action
Anushka	Sharma	anushka@gmail.com	7894561233	22113345	11223345	Disable
			0	22113346	11223346	Disable
Pranshu	Sharma	pranshu@gmail.com	7894585212	22113347	11223347	Disable

A ICIN\_User    A ICIN Bank

http://localhost:4201/chequeBookRequest

Admin Portal   User Account   Cheque Book Requests   Logout

## Cheque Book Requests

Request Id	User Name	Contact Number	Account Number	Confirmed?	Action
1	Anushka Sharma	7894561233	22113345	Pending	Confirm
2	Anushka Sharma	7894561233	22113345	Pending	Confirm

A ICIN\_User    A ICIN Bank

http://localhost:4201/chequeBookRequest

Admin Portal   User Account   Cheque Book Requests   Logout

## Cheque Book Requests

Request Id	User Name	Contact Number	Account Number	Confirmed?	Action
1	Anushka Sharma	7894561233	22113345	Confirmed	
2	Anushka Sharma	7894561233	22113345	Pending	Confirm

A screenshot of a web browser window titled "ICIN Bank". The URL is "http://localhost:4201/chequeBookRequest". The page displays a table of "Cheque Book Requests" with the following data:

Request Id	User Name	Contact Number	Account Number	Confirmed?	Action
1	Anushka Sharma	7894561233	22113345	Confirmed	
2	Anushka Sharma	7894561233	22113345	Confirmed	

A screenshot of a web browser window titled "ICIN Bank". The URL is "http://localhost:4201/chequeBookRequest". The page displays a table of "Cheque Book Requests" with the following data:

Request Id	User Name	Contact Number	Account Number	Confirmed?	Action
1	Anushka Sharma	7894561233	22113345	Confirmed	
2	Anushka Sharma	7894561233	22113345	Confirmed	

✧ **SCREENSHOTS OF DATABASE**

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

SQL File 5\* user transactions admin cheque\_book x

1 • SELECT \* FROM bnp.cheque\_book;

Result Grid | Filter Rows: [ ] | Edit: [ ] Export/Import: [ ] Wrap Cell Content: [ ]

	id	accepted	user_id
▶	1	1	1
	2	1	1
*	NULL	NULL	NULL

cheque\_book 1 x Apply Revert

Result Grid Form Editor Field Types Query Stats

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

SQL File 5\* user transactions admin cheque\_book admin personal\_transaction x

1 • SELECT \* FROM bnp.personal\_transaction;

Result Grid | Filter Rows: [ ] | Edit: [ ] Export/Import: [ ] Wrap Cell Content: [ ]

	transaction_id	acc_no	acc_type	date	new_balance	prev_balance	transaction_type
▶	1	22113345	Primary	2021-11-19 04:15:38	20000	0	Deposit
	2	22113345	Primary	2021-11-19 04:16:57	19800	20000	Withdraw
	3	11223345	Savings	2021-11-19 04:18:40	5000	0	Deposit
	4	22113347	Primary	2021-11-19 04:37:18	332232	0	Deposit
	5	22113347	Primary	2021-11-19 04:37:26	329000	332232	Withdraw
	6	11223347	Savings	2021-11-19 04:37:47	32232	0	Deposit
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

personal\_transaction 1 x Apply Revert

Result Grid Form Editor Field Types Query Stats

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

SQL File 5\* user transactions admin cheque\_book admin personal\_transaction personal\_transaction primary\_account primary\_account 1

1 • `SELECT * FROM bnp.primary_account;`

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Result Grid | Form Editor | Field Types | Query Stats | Apply | Revert

	id	account_balance	account_number
▶	1	19800	22113345
	2	0	22113346
	3	329000	22113347
*	NULL	NULL	NULL

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

SQL File 5\* savings\_account savings\_account 1

1 • `SELECT * FROM bnp.savings_account;`

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Result Grid | Form Editor | Field Types | Query Stats | Apply | Revert

	id	account_balance	account_number
▶	1	5000	11223345
	2	0	11223346
	3	32232	11223347
*	NULL	NULL	NULL

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Schemas: bnp

Tables: admin, cheque\_book, personal\_transaction, primary\_account, savings\_account, transactions, user

SQL File 5\* transactions Limit to 1000 rows

1 • SELECT \* FROM bnp.transactions;

Table: savings\_account

Columns:

id	account_balance	account_number
1	23	22113345
2	3243	22113347
*	NULL	NULL

Result Grid

transaction_id	ifsc	description	destination_acountnumber	source_acountnumber	transaction_amount
1	ICN0001	Fund Transfer	22113345	22113345	23
2	ICN0001	Fund Transfer	22113347	22113347	3243
*	NULL	NULL	NULL	NULL	NULL

Object Info Session transactions 1 × Apply Revert

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Schemas: bnp

Tables: admin, cheque\_book, personal\_transaction, primary\_account, savings\_account, transactions, user

SQL File 5\* transactions Limit to 1000 rows

1 • SELECT \* FROM bnp.user;

Table: savings\_account

Columns:

id	address	fullname	mailid	password	phonenumer	surname	primary_account_id	savings_account_id
1	21 street f hoff Agra up	Anushka	anushka@gmail.com	791bd01b5c514eb4ae538b1802a28d84	7894561233	Sharma	1	1
3	23 err grdg aligarh up	Pranshu	pranshu@gmail.com	f6fe98a33c7330a08711e1e2c6e048c	7894585212	Sharma	3	3
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Result Grid

id	address	fullname	mailid	password	phonenumer	surname	primary_account_id	savings_account_id
1	21 street f hoff Agra up	Anushka	anushka@gmail.com	791bd01b5c514eb4ae538b1802a28d84	7894561233	Sharma	1	1
3	23 err grdg aligarh up	Pranshu	pranshu@gmail.com	f6fe98a33c7330a08711e1e2c6e048c	7894585212	Sharma	3	3
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Object Info Session user 1 × Apply Revert